

DECEMBER 15, 1945

Railway Age

Founded in 1856

THE LIBRARY OF
CONGRESS
SERIAL RECORD

JAN 5 1946

COPY
BUST



BALDWIN LOCOMOTIVES

TRACK 28

DEPARTS

12-01 A.M.

January 1, 1946

SPECIAL TRAIN

RESERVED FOR THE FRIENDS
AND CUSTOMERS OF UNIT
TRUCK CORPORATION

FOR—
HEALTH
HAPPINESS
PROSPERITY

RUNS THROUGH TO
DECEMBER 31, 1946

HERE'S YOUR TRAIN, BOSS—

ALL PASSENGERS



UNIT TRUCK CORPORATION

MINER

Friction Draft Gears

STURDY IN CONSTRUCTION

POSITIVE IN ACTION

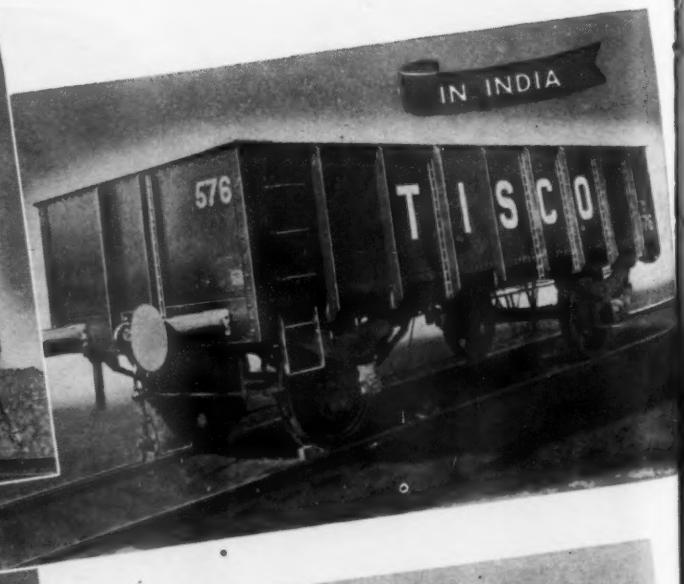
ABSOLUTELY RELIABLE



W. H. MINER, INC. CHICAGO

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price \$6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 119, No. 24.

U.S.S. COR-TEN Celebrates



UNITED

10 Years of Progress

1935-1945

Getting Rid of Dead Weight Pays

**SINCE 1935 U·S·S COR-TEN HAS PROVED IT
'ROUND THE WORLD**

U·S·S COR-TEN's amazing success in reducing dead weight safely and profitably has not been confined to the railroads of the U. S. A. alone. In Canada, Brazil, Peru, Costa Rica, Nicaragua and in far away India, South Africa and Australia, the name "U·S·S COR-TEN" has become synonymous with lightweight, revenue-producing construction wherever railroad men foregather.

The reason is simple. It is because U·S·S COR-TEN most nearly approaches the requirements for the ideal material for reducing railroad car weight.

U·S·S COR-TEN has high strength combined with high resistance to atmospheric corrosion, to impact, abrasion and fatigue. U·S·S COR-TEN forms easily; welds satisfactorily without the need of stress relieving. And finally, U·S·S COR-TEN is low in cost.

When used correctly, not just as a substitute for plain steel but as an integral factor in lightweight

design, U·S·S COR-TEN will reduce weight at little or no increase in cost—and without the sacrifice of a single advantage previously enjoyed. Ten years' service, under widely varying climatic and operating conditions has merely served to confirm these facts.

We quote a letter recently received from Sir Harold Clapp, Minister of Transportation of the Commonwealth of Australia, who as Chairman of the Victorian State Railways introduced U·S·S COR-TEN in the first streamliner built and operated below the Equator:—"I recently made inquiries regarding our U·S·S COR-TEN train the 'Spirit of Progress' (shown below) which has now been in service eight years, and there is no indication of corrosion on it anywhere. This is extremely satisfactory as it is about at this stage in the life of our mild steel vehicles when we have to commence patching them."

AMERICAN STEEL & WIRE COMPANY, Cleveland, Chicago, New York

CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh and Chicago COLUMBIA STEEL COMPANY, San Francisco

NATIONAL TUBE COMPANY, Pittsburgh TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham

United States Steel Supply Company, Chicago, Warehouse Distributors

United States Steel Export Company, New York

EVERY SUNDAY EVENING, United States Steel presents *The Theatre Guild on the Air*. American Broadcasting Company coast-to-coast network. Consult your newspaper for time and station.

MATTHEW FLINDERS

STATES STEEL



then he said to himself:



Of all the heroic plans to raise the status of the people—simplest and most practical is that of Mexico's President Camacho. Says he—

"Each educated Mexican is to teach an illiterate Mexican to read and write."

The reason for this, he explains, is that we are going into a new world where education will win. Well he knows that the passing along of primary facts, from the instructed to the uninstructed, provides the toehold for education in any line.

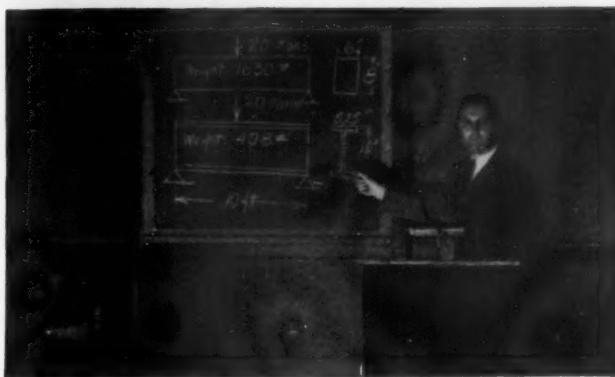
Well he knows that education never hurts a man, if he is willing to learn a little something after he graduates.

Well he knows the war was won by post-graduate thinking on production—by out-smarting outmoded procedures — through thousands of procedures such as—



"TEACH" . . . he says

HERE, PRESIDENT CAMACHO, are sources of education for any man interested in producing better products and structures at lower cost:



ENGINEERING. A course in welding engineering for shop supervisors, engineers, designers and executives. Held regularly in Cleveland at Lincoln plant. A valuable "eye opener" for ways to improve products and cut costs. 5 days' instruction by nationally prominent authorities. Write for details and schedule of dates.



WORLD'S LEADING BOOKS. On all phases of Arc Welding. Authentic. New 8th Edition "Procedure Handbook" outdates all previous editions. 1312 pages of latest facts gathered by experts. Price only \$1.50. Also: "Lessons in Arc Welding" (50¢), "Simple Blueprint Reading" (50¢), "Welding Metallurgy" (\$1.50), "Studies in Arc Welding" (\$1.50), "Design, Manufacture and Construction" (\$1.50), "Maintenance Arc Welding" (50¢). Order C.O.D. Postpaid in U.S.A.



WELDING A-B-C's. More than 25,000 welders have started their careers in Arc Welding with the sound foundation afforded by the Lincoln Welding School. 120 hours of continuous practice in latest techniques under leadership of world-famous instructors. In addition, special courses are offered in the welding of alloys, pipe and sheet metal. Full details in Bul. 416.



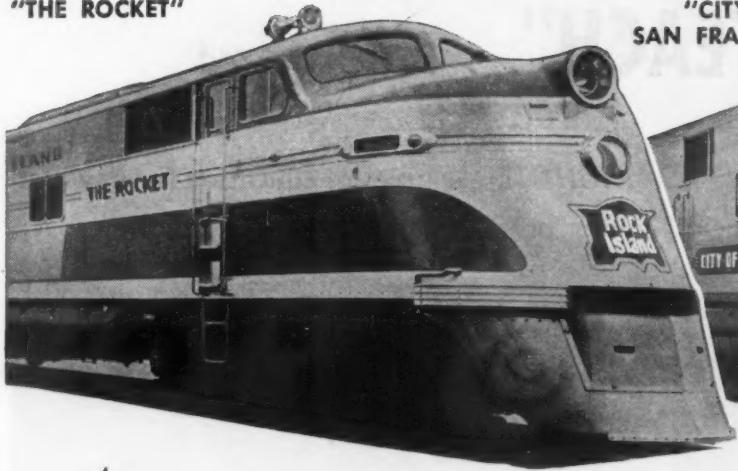
TO SOLVE YOUR PROBLEMS. The Lincoln Engineer located nearby has had wide experience in all phases of Arc Welding application and will gladly help you design and produce better products and structures at lower cost. Call him today. No obligation.

THE LINCOLN ELECTRIC COMPANY • Dept. B-2 • Cleveland 1, Ohio

America's greatest natural recourse

ARC WELDING

"THE ROCKET"



"CITY OF SAN FRANCISCO"



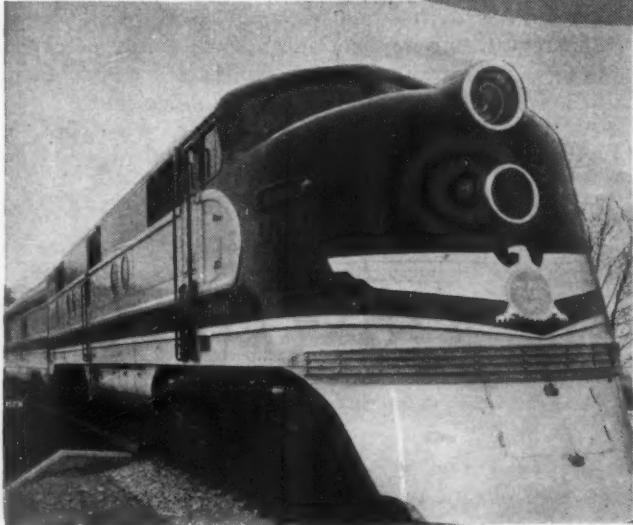
KNOWN by the COMPANY they KEEP

Products, like persons, are readily known by the company they keep. Sinclair Lubricants are in the best of company—on crack trains of America's leading railroads.

SINCLAIR **RAILROAD LUBRICANTS**

SINCLAIR REFINING COMPANY, RAILWAY SALES
NEW YORK • CHICAGO • SAINT LOUIS • HOUSTON

"MISSOURI
RIVER EAGLE"



"SILVER
METEOR"

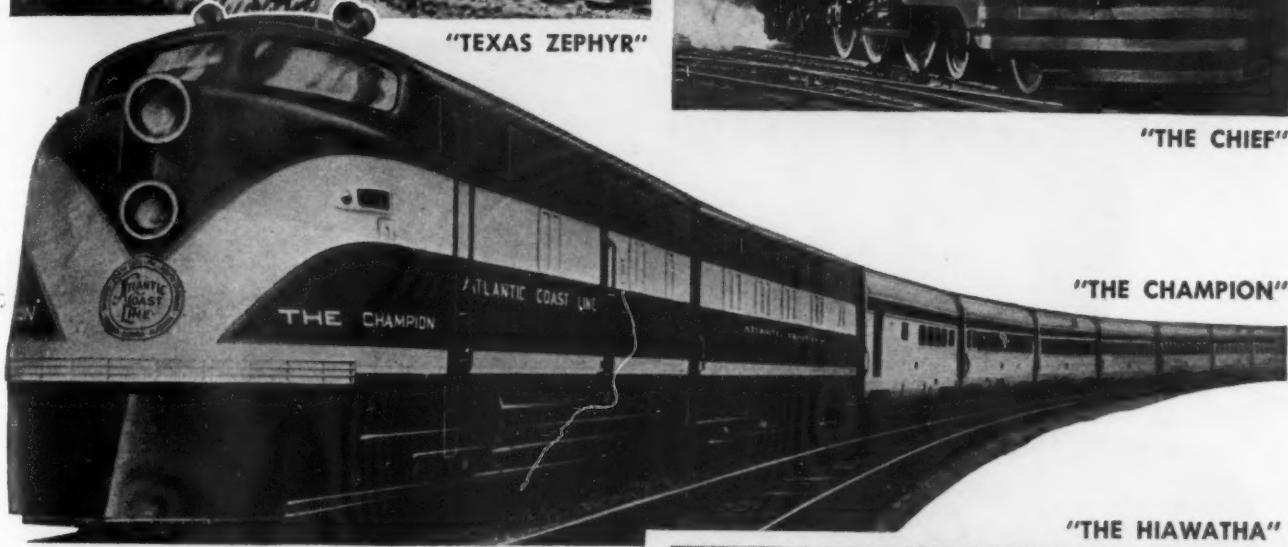




"TEXAS ZEPHYR"



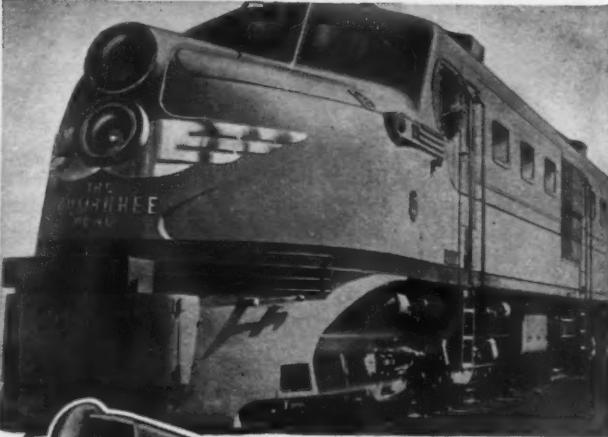
"THE CHIEF"



"THE CHAMPION"



"THE HIAWATHA"



"THE TENNESSEAN"



"20th CENTURY
LIMITED"



"CITY OF
LOS ANGELES"

USED BY MORE THAN 150 AMERICAN RAILROADS



That for VIBRATION STRESSES



Yes, you can really snap your fingers at premature failure caused by normal vibration stresses when you choose Ammonoduct for train-line or air-brake piping in passenger and freight cars.

Here's why. Ammonoduct, a continuous butt-weld product, is made from a special grade of open-hearth steel—a strong, uniform, ductile steel with ability to withstand the shock and vibration stresses encountered in hard day-in-day-out operation.

Because of its combined strength and ductility, Ammonoduct is easily bent cold. No preheating or annealing is needed. Even U-bends, made cold with Ammonoduct, can be restraightened without fracture. Ammonoduct also threads and welds readily, thus

making a certainty of quick, economical installations.

Ammonoduct is available in sizes from $\frac{1}{2}$ inch to 3 inches, standard-weight and extra-strong, per specifications ASTM A-53 and AAR M-111. With all its advantages, it is not expensive—sells for the same price as regular steel pipe. Make a habit of specifying Ammonoduct when ordering train-line pipe and auxiliary train-piping.



AMMONODUCT

THE PIPE FOR TRAIN-LINES AND AIR-BRAKE PIPING

ANEMOSTAT

...the "business-end" of Air-Conditioning!

"NO AIR-CONDITIONING SYSTEM IS BETTER THAN ITS AIR DISTRIBUTION".

When large volumes of conditioned air are forced into the interior of a railroad car, drafts occur—unless ANEMOSTATS are used. The patented ANEMOSTAT is an air-diffusing device without moving parts. It is easily installed on any air-conditioning, ventilating, or hot-air heating system on railroad cars. It assures draftless distribution of any volume of cooled or heated air at any velocity.

During the last 25 years more than 50,000 installations throughout the world have proven that efficient air-distribution is synonymous with ANEMOSTAT—the "business-end" of air-conditioning!

HERE IS HOW IT WORKS

The ANEMOSTAT diffuser creates a series of air currents flowing away from the device in planes or blankets at scientifically correct angles. In addition, the ANEMOSTAT creates a series of counter-currents of secondary-air which are siphoned into the diffuser and mixed with the incoming air

streams. Thus, 35% of car-air is pre-mixed with the incoming cooled or heated air before the latter is discharged into the car. This action is the only true "Aspiration"—and it is exclusive with ANEMOSTAT!

This air-mixing action within the ANEMOSTAT establishes the required car-temperature at a point well above the breathing level—so no blasts of hot or cold air are encountered by the passengers. Higher temperature differentials are thereby possible . . . resulting in smaller volumes of air requiring conditioning.

Higher air-velocities may be employed with the ANEMOSTAT because of its draftless diffusion, so smaller ducts and simplification of duct layouts naturally follow. Yes, ANEMOSTAT is the "business-end" of air conditioning!

•
Write today for Bulletin which gives you full details. There's no obligation!

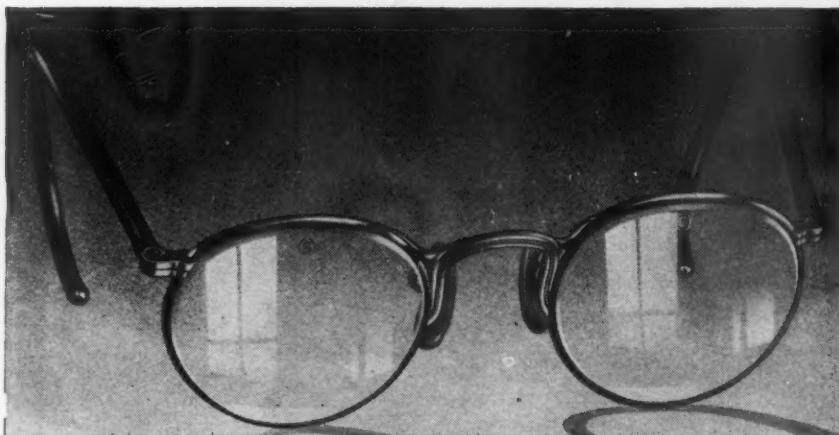
AC-1010


Veteran-ize your personnel!
Many discharged war veterans received valuable technical and specialized training. Always consider veterans when you employ. They did their share—now let's all do ours!

ANEMOSTAT

ANEMOSTAT CORPORATION OF AMERICA
10 East 39th Street, New York 16, N. Y.

THERE IS AN ANEMOSTAT DESIGNED FOR EVERY RAILROAD APPLICATION



AO Ful-Vue Safety Goggles, with Super Armorplate lenses, afford efficient eye-protection with the greatest amount of all-angle visibility, comfort and good appearance.

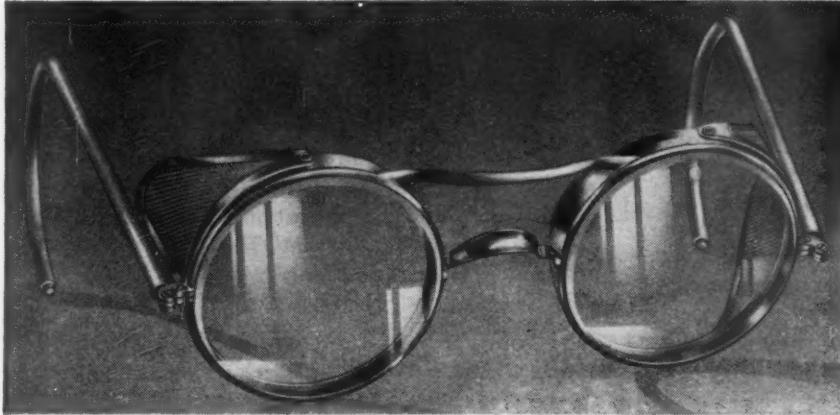
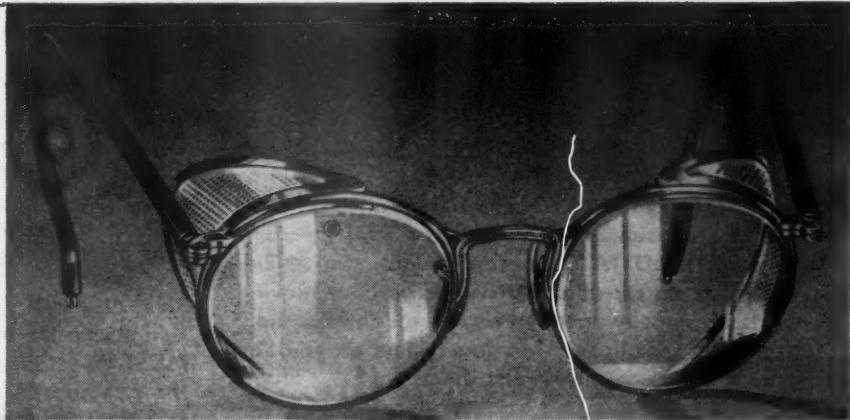


AO SAFETY GOGGLES

Safeguard the Eyes of Industry



AO Ful-Vue Safety Goggles with wire mesh side shields afford extra protection against particles striking from sides.



AO Spectacle Goggles—with rigid bridge and reinforcing bar—are comfortable and sturdy... give full protection against particles striking from front or sides.

AO offers a type of safety goggle for every eye-protection requirement. Your nearest AO Representative will be glad to advise you regarding selections.

American Optical
COMPANY
SOUTHBridge, MASSACHUSETTS
Safety Division

Rid
Mar
me
wh
Tr
f

A-
NO

LO

glasses,
lenses,
action
and
comfort

—with
forcing
e and
tection
g from

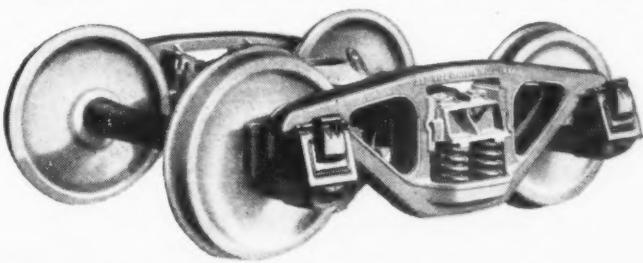
ILWAY ACE

Riding Ease, Safety, Low Maintenance...these are fundamental modern requirements which the A.S.F. Ride-Control Truck fully satisfies, yet this better, smoother-riding truck is in the weight and price class of conventional designs. It's the modern freight car truck for cars of all types

MINT-MARK OF  FINE CAST STEEL

Over 18,000 car sets are already in service or on order by 44 railroads and private car owners.

A-S-F Ride-Control TRUCK (A-3)
NO SPRING PLATES—NO SPRING PLANKS



LONG SPRING TRAVEL • CONSTANT FRICTION CONTROL

**AMERICAN
STEEL
FOUNDRIES**

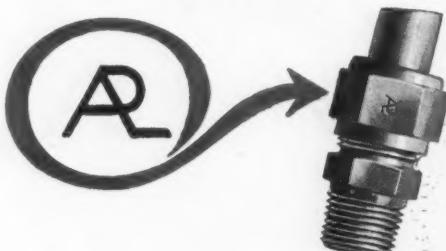
CHICAGO

Select

THE TUBING THAT FITS THE JOB AND
THE COUPLING THAT FITS THE TUBING

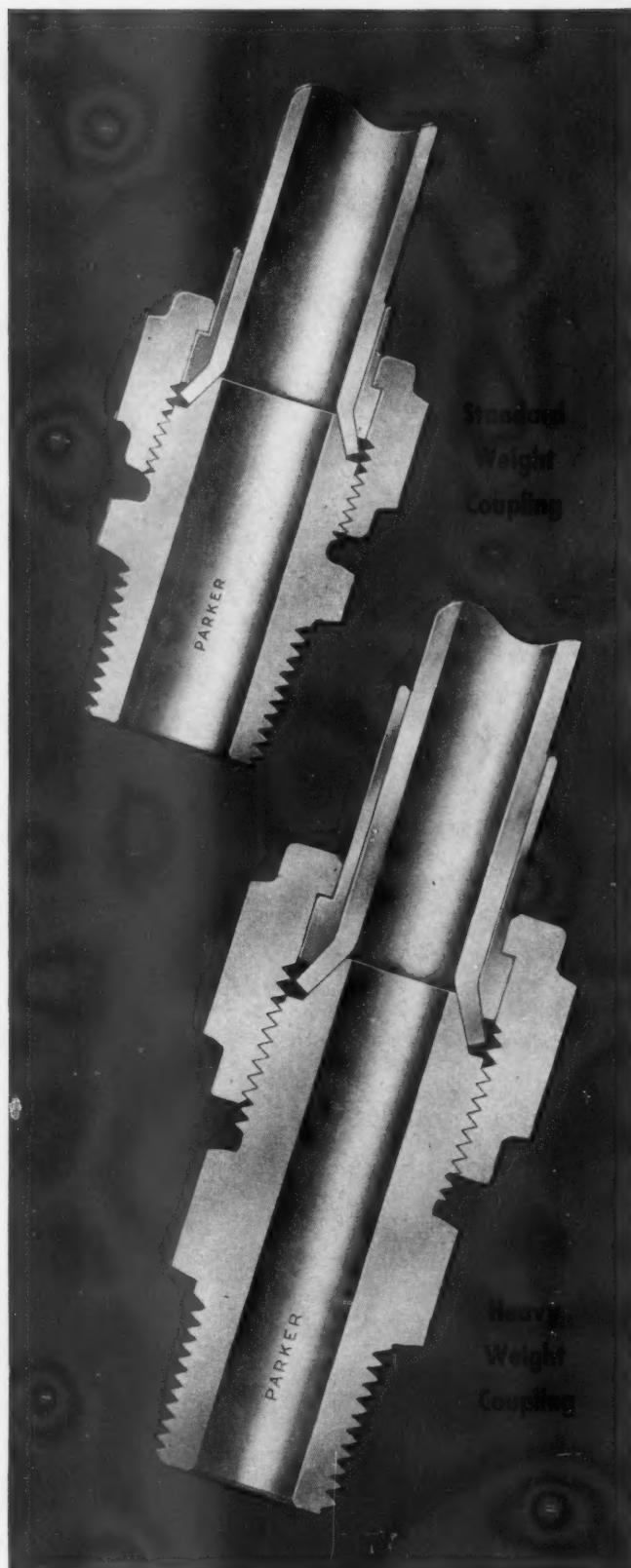
That's sound engineering—sound Fluid Power engineering. It means a tubing system that insures smooth, streamlined flow, with leak-tight and vibration-proof joints, plus easy installation and maintenance.

The Parker trade mark is your assurance of getting exclusive and patented Parker design features that set the standard for Army-Navy aircraft and ordnance use.

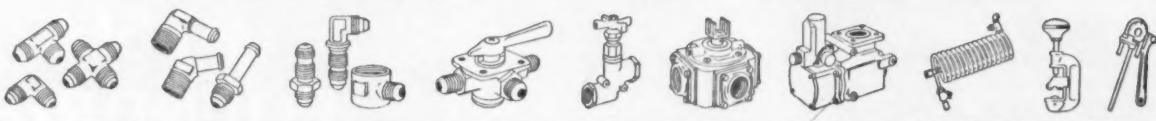


Note particularly the angle of the flare. It is scientifically set to provide maximum clamping surface, with equalized pressure all around. All stress and strain are taken on the body, nut and sleeve—there is full protection for the system against shock and vibration.

Catalog 201-C gives complete data on *standard weight* and *heavyweight* triple couplings— $\frac{1}{8}$ " to $1\frac{1}{2}$ "—in steel, brass, stainless steel and aluminum. Ask your jobber or write to The Parker Appliance Company, 17325 Euclid Avenue, Cleveland 12, Ohio.



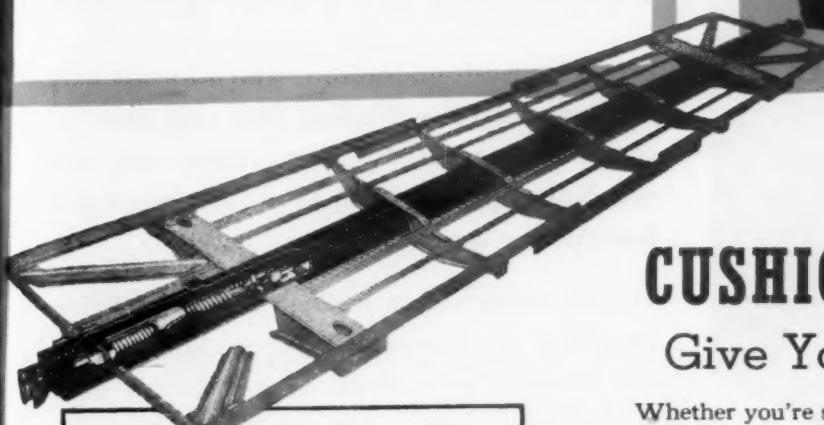
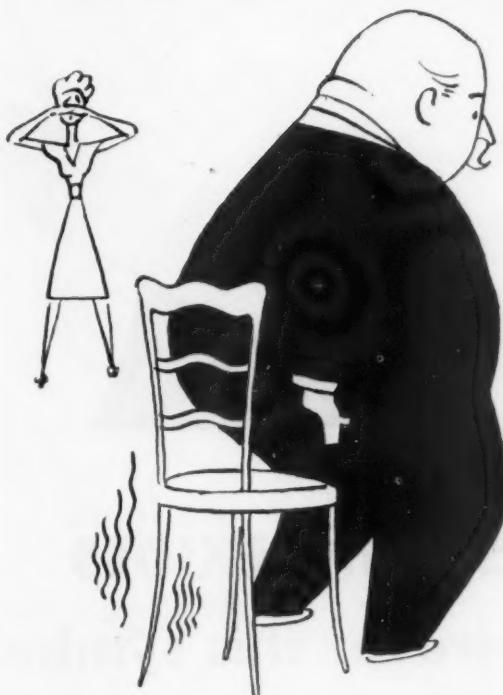
THE PARKER APPLIANCE CO.
CLEVELAND • LOS ANGELES



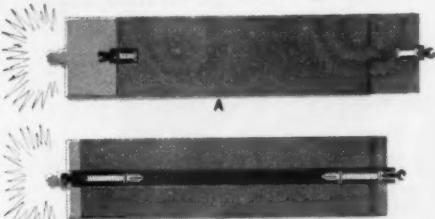
FLUID POWER PRODUCTS FOR ALL INDUSTRY

IT'S EASY

to shatter a chair...



Here's what actually happens . . . when two stationary freight cars receive the same impact, equivalent to a 50-ton car, loaded to capacity, coupling at a speed of 4 m. p. h.:



CONVENTIONAL CAR (A): Draft gear "goes solid," car receives almost entire impact.

DURYEA CAR (B): Shock absorbed by cushion gears, car and lading are comparatively undisturbed.

BUT—

A Furniture Shipper
FOUND THE WAY TO SHIP
FRAGILE FURNITURE SAFELY
IN FREIGHT CARS

— "We have made it a practice to pay particular attention to certain Santa Fe cars that we have used which are equipped with Duryea Underframes and we have noticed that invariably, contents of such cars arrive at destination with little or no damage."

—(from a letter in our files)

DURYEA CUSHION UNDERFRAMES

Give You Shockproof Shipping!

Whether you're shipping furniture or *any other* merchandise subject to damage en route, Duryea-equipped cars give you better arrivals, reduced losses. The unique Duryea floating center sill travels the force of any impact the entire length of the car, absorbing it as it goes in big cushion springs—the underframe takes the shock; it is hardly felt in the car.

HOW THE DURYEA CUSHION UNDERFRAME CONTRIBUTES TO VICTORY

PROTECTS car and lading, prolongs car life, cuts damage claims.

PERMITS higher handling speeds.

ELIMINATES gear replacements, maintaining efficiency for life of car.

SAVES TIME loading and unloading. Needs less packing and bracing.

SAVES MONEY usually spent for maintenance on every part of car.

COMPLEMENTS air brake; Duryea cars withstand abrupt stops.

CUTS SLACK to pre-determined ideal.

COSTS NO MORE than conventional type, for average Duryea gear.

O. C. DURYEA CORPORATION

30 Rockefeller Plaza, N. Y. 20, N. Y. • 135 S. LaSalle St., Chicago 3, Ill.
725 Fifteenth St., N. W., Washington 5, D. C.



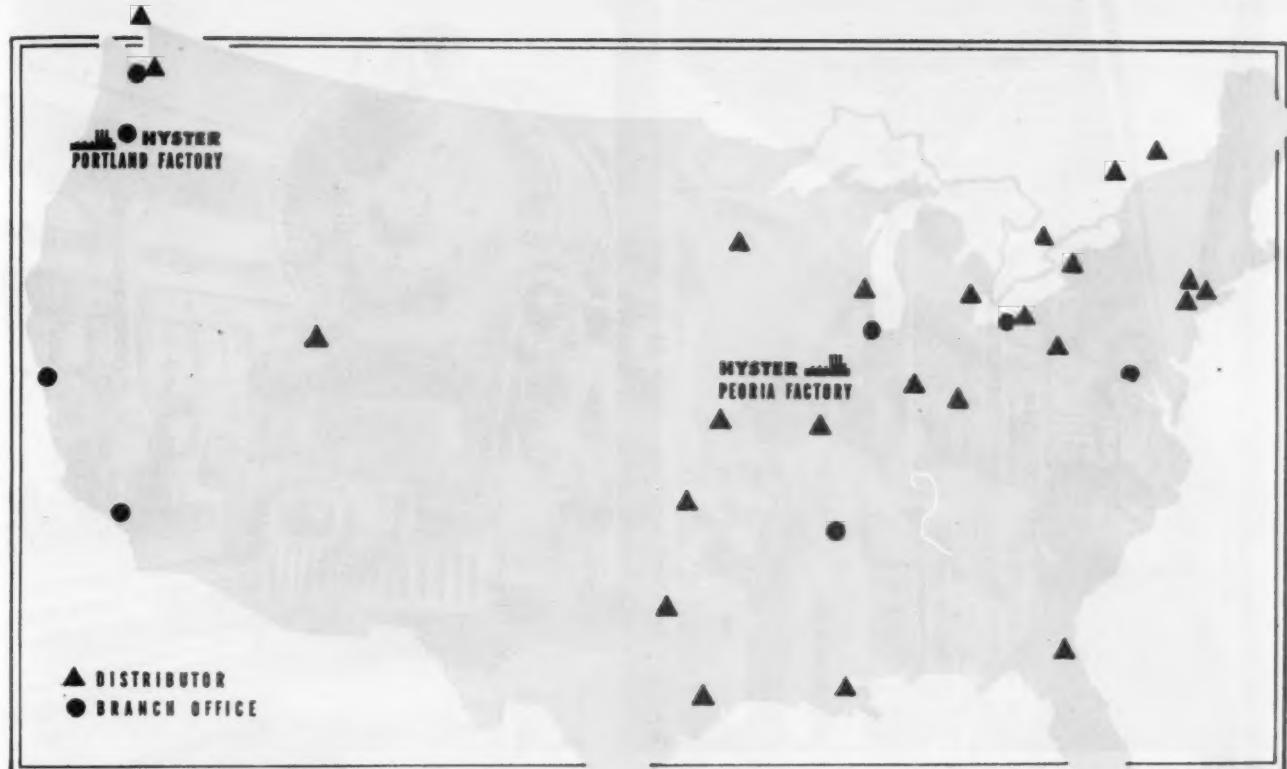
**Specify EXIDES
wherever this symbol
appears in your plans**

Extra electrical innovations, which form a part of most plans for the fine new cars soon to come, call for added power—trustworthy and economical power. All are assured when Exide batteries are specified.

On thousands of coaches and Pullmans, Exide Ironclads are keeping cars bright and air-conditioning units functioning smoothly even during long stops. They are cranking Diesel locomotives, powering train telephones and signal systems. And Exides will serve tomorrow's greater needs with the same dependability, long-life and ease of maintenance as they have since 1891.

Exide
IRONCLAD
BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto



HYSTER

LIFT TRUCK SERVICE COVERS THE COUNTRY

33 HYSTER DISTRIBUTORS AND FACTORY BRANCH OFFICES GIVE HYSTER OWNERS COAST-TO-COAST SERVICE...

HYSTER owners throughout industry have rapid service on genuine Hyster parts and on mechanical maintenance.

Nation-wide parts and mechanical service is available through 2 Hyster factories, 8 Hyster branch offices and 23 Hyster distributors—a total of 33 centers.

This network of Hyster service facilities provides two important features:

1. Strategically located supplies of genuine Hyster parts.
2. Factory-trained mechanics ready to render special service.

Hyster lift trucks get around-the-clock use, meet both production and utility demands.

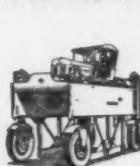
When either parts replacements or service attention is required, both are quickly available. *Hyster's Service Department, like Hyster's Sales Department, covers the country.*

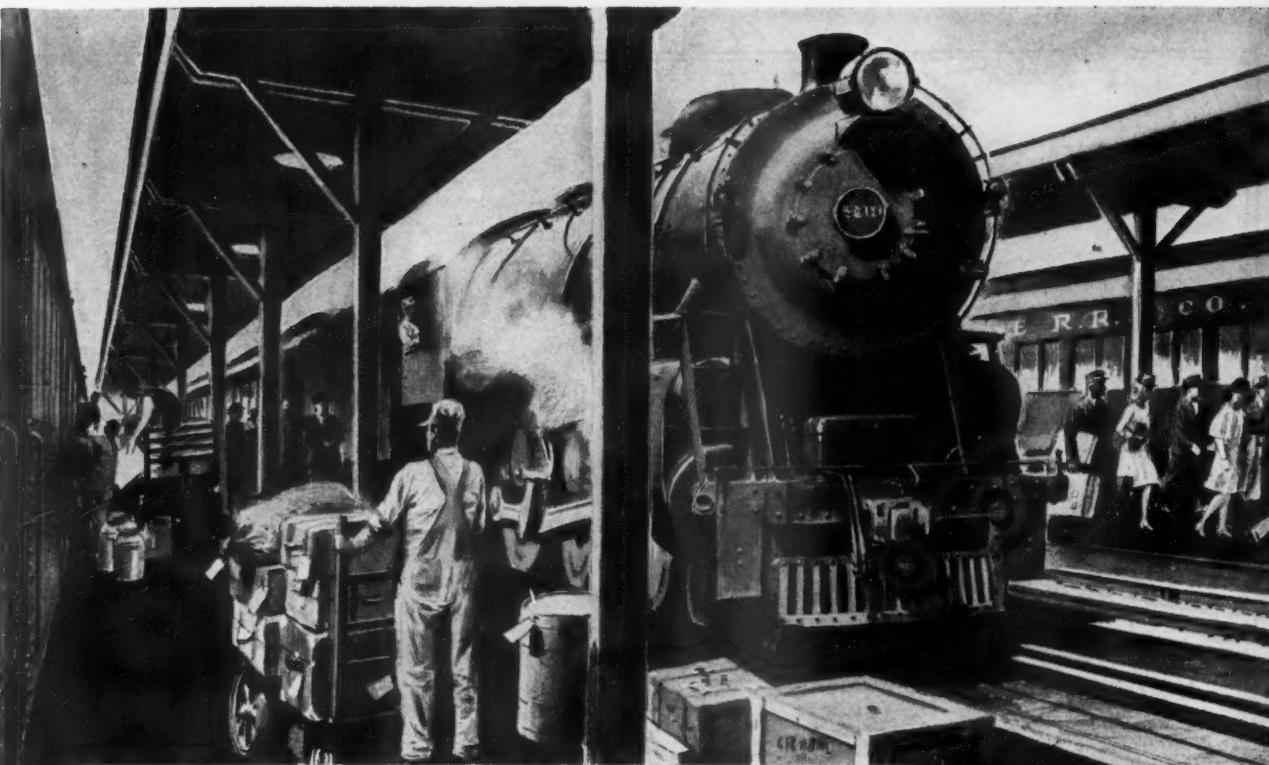


HYSTER
COMPANY

2932 N. E. Clackamas St., Portland 8, Oregon
1832 North Adams Street, Peoria 1, Illinois

Manufacturers of a complete line of pneumatic tire lift and straddle trucks and mobile cranes





For REAL ECONOMY you need a surface that...

... that's why you'll save money (and maintenance trouble, too!) year after year when you specify Flintkote Mastic Flooring for loading platforms, ramps, station floors and wherever a durable, comfortable floor is needed.

Its *tough* surface is hard enough to stand up under the *heaviest* traffic . . . yet resilient and shock-absorbing. It won't chip or crack . . . even when subjected to heavy impact loads, because it is *malleable* . . . a quality that enables it to "heal" its own minor cuts.

It is dustless and noise-deadening; its "cushion" effect reduces wear and gives foot comfort. It resists water and most common chemicals . . . protects its base from rotting or corroding.

With Flintkote Flooring Emulsions, Mastic Floors are easily and quickly applied over old floors or on new construction. Any reasonably strong base is satisfactory . . . concrete, wood, brick or steel.

Write for complete information on *cold laid* Mastic Floorings.

* * *

OTHER FLINTKOTE RAILROAD PRODUCTS: Car Cements — Car Floors — Asphalt Protective Coatings — Insulation Coatings — Building Maintenance Materials — Waterproofing and Damp-proofing Materials.

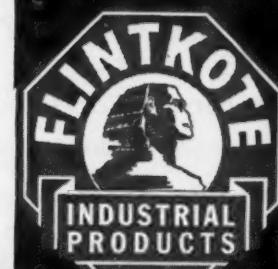
LASTS

and

LASTS

and

LASTS



THE FLINTKOTE COMPANY • Industrial Products Div. • 30 Rockefeller Plaza, New York 20, N. Y.

ATLANTA • BOSTON • CHICAGO HEIGHTS • DETROIT • LOS ANGELES • NEW ORLEANS • WASHINGTON • TORONTO • MONTREAL

*To spur rail travel
A.C.F. presents*



...

the JUNIOROOM...



Combining the advantages of home and hostelry in transit, the JUNIOROOM offers comfort and *privacy* for mother and child — the STEWARDETTE, many services of a fine hotel such as beauty parlor, stenographer, first-aid facilities.

In normal service, this room offers a private, daytime stateroom for three — for mother traveling with baby or restless youngsters, a compartment where neither children's crying nor youthful exuberance can disturb fellow travelers.

This "nursery in miniature" features a double seat which may be readily converted into a crib. A grille pulls forward out of the seat cushions, locks in position to safeguard the child when in bed. A drape may be drawn to muffle sound and exclude light. Other appointments include a handsome vanity dresser that readily converts into a wash basin by folding up a lid; vanity chair, mirror, folding table and service phone. In a word, the modern train, like the ocean liner, will include the comforts and services of a fine club.

and STEWARDETTE ▶



EVERY MINUTE
Operations is
ting cars unloading
the yard and back-
ing traffic—all of
which can be expedited
Super-Aire Spea-

Your instructions
part of the yard can
—and without delay—
want or the crew you
within range of your

The Super-Aire
used in such wide



LASTS

and

LASTS

and

LASTS



Plaza, New York 20, N. Y.

• TORONTO • MONTREAL

RAILWAY AGE

all these services in the man

TELEPHONE



... Occupants of the JUNIOROOM receive instant service from the stewardess merely by picking up the phone. Perhaps mother wants the milk bottle warmed or a glance at the menu . . . or if the occupants are adults, "cocktails for two" is equally simple.

BEAUTY PARLOR



... Ladies may now arrive at their destination as impeccably groomed as if they stepped from a bandbox — for the Stewardette provides facilities for a "permanent", hair drying and all the requisites for glamor.

STENOGRAPHIC SERVICE

... Busy executives can now take care of that forgotten or emergency letter — save precious moments.



WHATEVER A.C.F. BUILDS — IT IS KNOWN TO BUILD WELL!

AMERICAN CAR

Many-purpose STEWARDETTE!



FIRST AID

For the traveler taken suddenly ill, the Stewardette provides a couch and emergency first-aid supplies.



ANNOUNCEMENT SYSTEM

Pointing out historic or scenic spots on the right of way . . . station announcements . . . stock market, crop reports and news highlights are but a few of the possible uses.



AR AND FOUNDRY COMPANY

NEW YORK - CHICAGO - ST. LOUIS - CLEVELAND - WASHINGTON
PHILADELPHIA - PITTSBURGH - ST. PAUL - SAN FRANCISCO

In future issues look for additional advances that help sell rail travel.



EVERY MINUTE operations in the yard and handling traffic—all can be expedited by Super-Aire Spots.

Your instruments are part of the yard equipment—and without want or the crew within range of

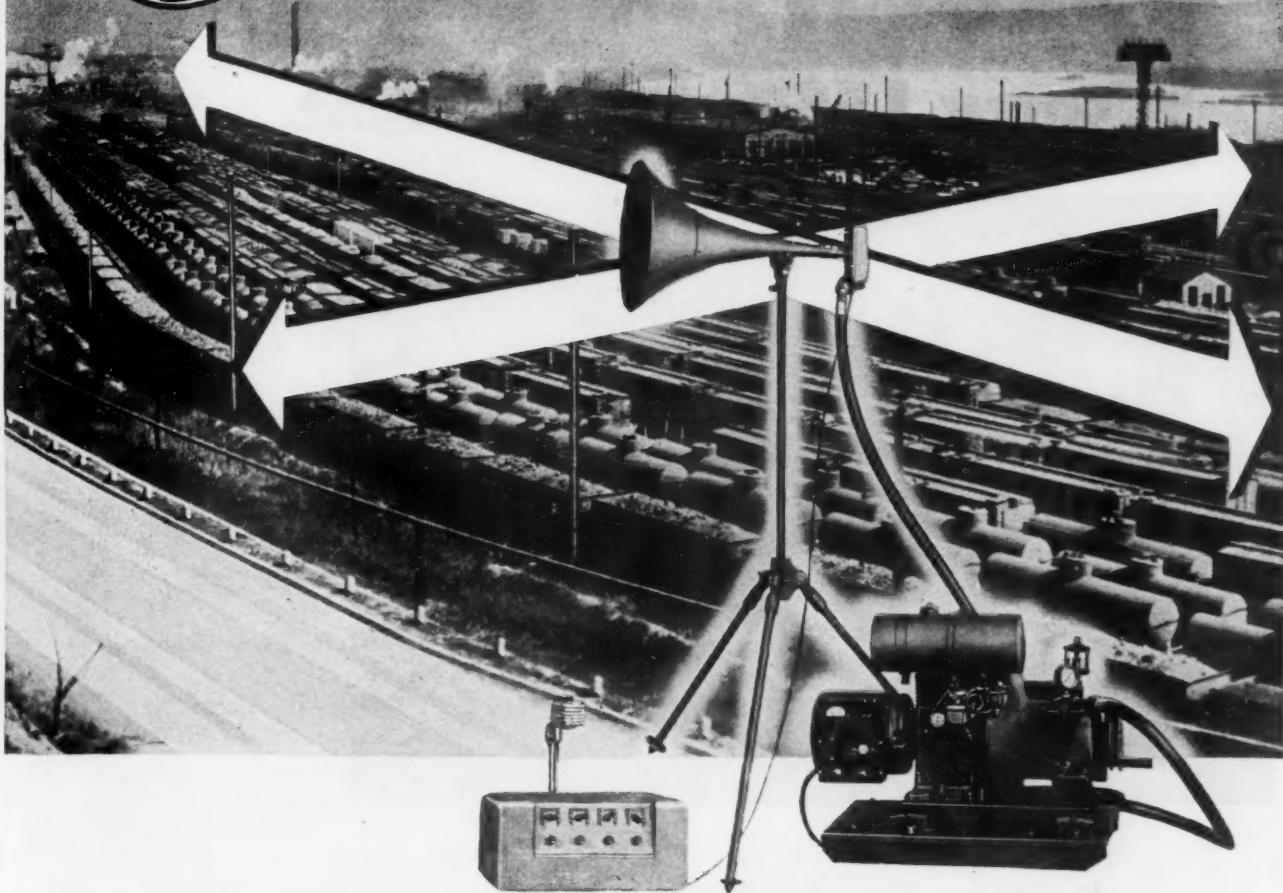
The Super-Aire Spots used in such wide

er spots
bounce-
arts and
the pos-

ditional
travel.



SUPER-AIRE SPEAKER



Keeps 'em rolling—faster

EVERY MINUTE saved in yard operations is money saved. Getting cars unloaded—empties out of the yard and back into service—routing traffic—all of these operations can be expedited with the G-E Super-Aire Speaker.

Your instructions reach every part of the yard clearly, intelligibly—and without delay. The man you want or the crew you want is always within range of your voice.

The Super-Aire Speaker can be used in such widely diversified fields

as: construction projects, surface mining, ranching, harbor control, public utilities, highways, motion picture directing, airports, etc.

Points within a wide area can be reached to get speedy action—when you need it—where you need it.

Write for complete information to: Electronics Department, Specialty Division, General Electric Company, Syracuse, New York.

See your G-E distributor for Universal Radio Parts, P. A. Systems, Crys-

tal, Receiving, Industrial and Transmitting Tubes, Laboratory and Service Test Equipment.

Electronics Department
General Electric Company, Syracuse, N. Y.
RA 12

We are interested in further information concerning the G-E Super-Aire Speaker for

Our own use
 Resale Distribution

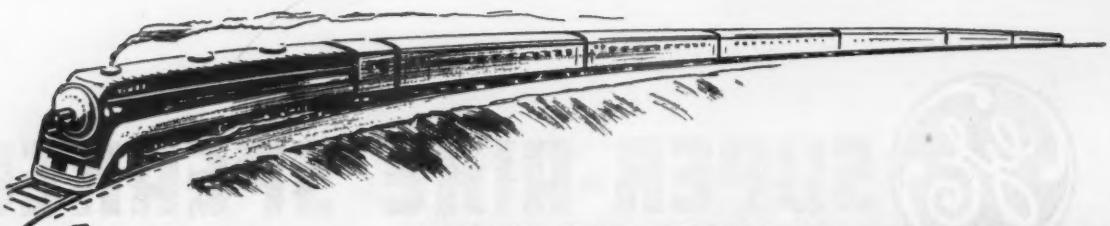
Name.....

Company.....

Address.....

GENERAL ELECTRIC

165-D3



Cars that carry ALKALINE BATTERIES carry LESS dead-weight

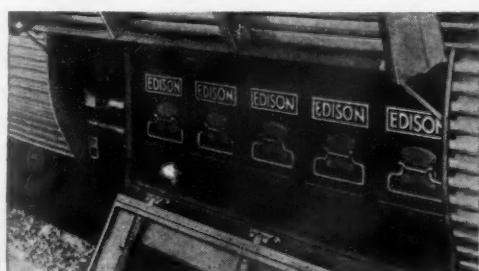


EDISON ALKALINE BATTERIES answer the question of how to get the higher battery capacities necessary for ultimate passenger comfort in new cars — and yet keep dead-weight down to the minimum. Not only are they the lightest type of battery available for railway-car services, but they enable you to save weight where it counts most — near the middle of the car. The higher the kilowatt-hour capacity needed, the more weight you save by equipping cars with *alkaline* batteries.

An outstanding reason for their light weight is their high-strength, steel cell construction. Together with a fool-proof electrochemical principle of operation, this construction also makes alkaline batteries

highly desirable from another important standpoint — unequaled dependability of operation. You can install no better "power insurance" for the electrical services provided for passenger comfort, than weight-saving *alkaline* batteries. Trends toward higher-voltage systems, and new developments in associated equipment, make alkaline batteries a more attractive choice for new passenger cars than ever before. Edison Storage Battery Division of Thomas A. Edison, Incorporated, West Orange, New Jersey.

Edison
THE LIGHTWEIGHT BATTERY
FOR LIGHTWEIGHT CARS



ALWAYS GOOD...

and Now Better Than Ever!

The FAIRBANKS-MORSE
Demountable-Hub
WHEEL

• Extra thickness and extra hardness at the areas of greatest wear—those are the exclusive new advantages of Fairbanks-Morse Sheffield-Steel Wheels for motor, trailer, and push cars.

These life-prolonging qualities result from cold-pressing with newly-designed dies on a 1500-ton press. Fairbanks-Morse controls every processing operation in the manufacture of these wheels. This assures absolute uniformity of the finished product.

The improved wheels conform to all A.R.E.A. standards. Absolutely concentric, they are available in insulated or uninsulated types, in 14-, 16-, and 20-inch sizes.

Write for bulletin. Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

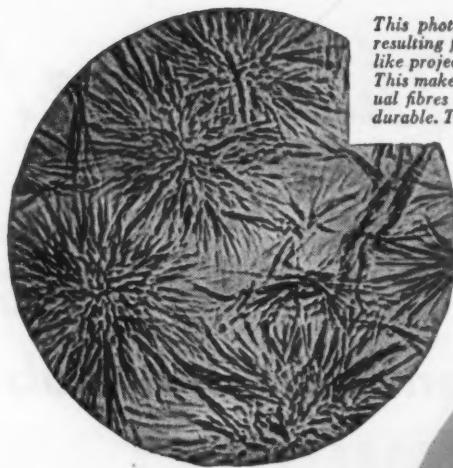


Fairbanks-Morse

A name worth remembering



Diesel Locomotives • Diesel Engines
Scales • Motors • Pumps • Generators
Magnetos • Stokers • Railroad Motor
Cars and Standpipes • Farm Equipment



This photomicrograph shows the distinctive lead "soap" formations resulting from Red Lead's reaction with the vehicle. Note how the rod-like projections radiating from central cores spread out and intermesh. This makes a strong, flexible, interwoven structure—just as the individual fibres in a piece of cloth are intertwined to make cloth tough and durable. This type of soap formation is unique with "lead" paint films.



unique LEAD SOAPS...



another important reason why RED LEAD means Extra Rust Protection

Why is Red Lead outstanding as a metal protector?

One of the major reasons is this pigment's remarkable ability to impart to the paint film strong, tough, intertwining lead "soap" formations—as shown in the photomicrograph above.

These unique lead "soaps" improve the paint film in many ways. For one thing, they form a dense, intermeshing matrix which restricts the passage of water through the film. And rusting does not take place without the presence of moisture.

For another, they mechanically reinforce the film, giving it extra strength and toughness.

And again, Red Lead "soaps" contribute all-important elasticity—allowing movement along their intermeshing projections. This action helps prevent the ruptures to which a hard, unyielding film is subject. Moreover, when a paint film dries and ages, decomposition of the vehicle sets in. But, because of Red Lead's ability to combine with the decomposition products and form soaps, it increases both the durability of the paint film and its adhesion to the base metal.

Red Lead's extra strength, toughness and elasticity are demonstrated by the ten-

sile strength test below and substantiated by exhaustive research and field service.

Remember, too, that Red Lead is compatible with practically all vehicles commonly used in metal protective paints, including phenolic and alkyd resin types.

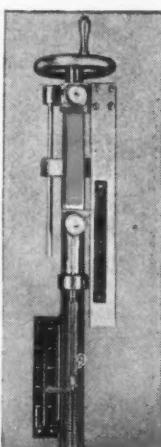
Specify RED LEAD for All Metal Protective Paints

The value of Red Lead as a rust preventive is most fully realized in a paint where it is the only pigment used.

However, its rust-resistant properties are so pronounced that it also improves any multiple pigment paint.

* * *

In this tensile strength test a typical Red Lead paint film has been stretched 18% without breaking. In withstanding this elongation it has maintained a load of 920 grams. Any film that exhibits these characteristics has unusual strength, toughness and elasticity. As metals expand and contract only a fraction of one percent, this film would adhere under the most extreme conditions.



No matter what price you pay, you'll get a better paint for surface protection of metal, if it contains Red Lead

Write for New Booklet—"Red Lead in Corrosion Resistant Paints" is an up-to-date authoritative guide for those responsible for specifying and formulating paint for structural iron and steel. It describes in detail the scientific reasons why Red Lead gives superior protection. It also includes typical specification formulas ranging from Red Lead-Linseed Oil paints to Red Lead-Mixed Pigment-Varnish types. If you haven't received your copy, address nearest branch listed below.

All types of metal protective paints are constantly being tested at National Lead's many proving grounds. The benefit of our extensive experience with Red Lead paint for both underwater and atmospheric use is available through our technical staff.



NATIONAL LEAD COMPANY: New York 6, Buffalo 3, Chicago 80, Cincinnati 3, Cleveland 13, St. Louis 1, San Francisco 10, Boston 6 (National-Boston Lead Co.); Pittsburgh 30 (National Lead & Oil Co., Penna.); Philadelphia 7 (John T. Lewis Bros. Co.); Charleston, W. Va. (Evans Lead Division).

DUTCH BOY
RED LEAD



EDWARDS

DOUBLE SEALED
DEHYDRATED SASH UNIT

PROTECTION against FOG // FILM // FROST

Summer and Winter . . . in high or low altitudes . . . under varying climate conditions — new Edwards Sash units assure perfect visibility, maximum passenger comfort and the more efficient operation of air conditioning systems because they are DOUBLE SEALED against FOG . . . FILM . . . FROST.

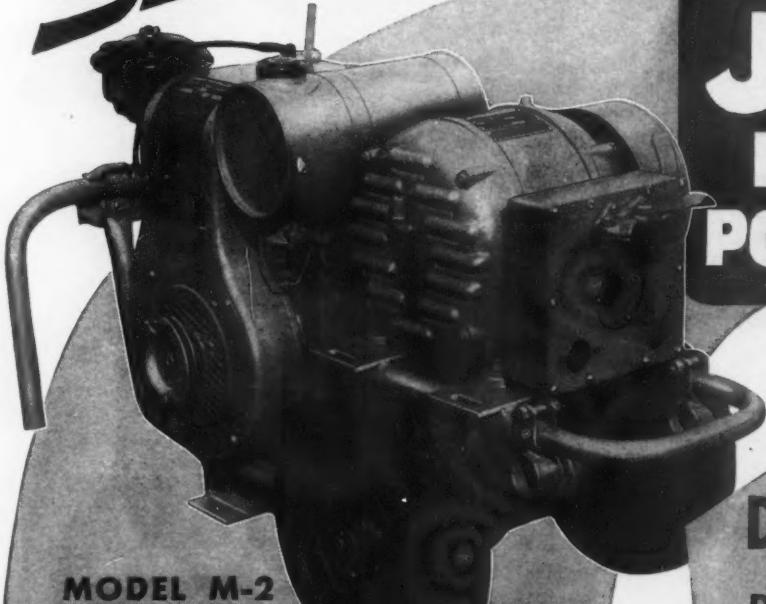
Developed as a result of years of experience in building sash for ALL types of transportation, these new "Clear Vision Coach Eyes" by Edwards are available in completely assembled units, ready for fast, economical installation in every type of new or rehabilitated equipment. Send for complete information about this new and BETTER Sash Unit.

The O. M. EDWARDS COMPANY, Inc.
SYRACUSE, N. Y.

EDWARDS SASH
THE EYES OF TRANSPORTATION



The SENSATIONAL, NEW



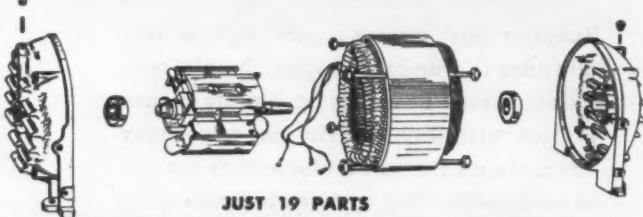
MODEL M-2

Rated capacity, 2.5 KVA, single or 3 phase 115 volt 60 cycle AC. Other models to deliver 1 KVA and 6 KVA continuous service, or 7.5 KVA intermittent service.

JACKSON PORTABLE POWER PLANTS

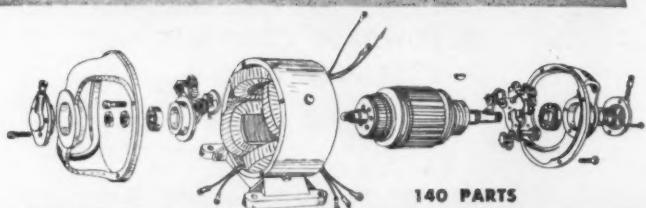
Establish
a NEW HIGH in
DEPENDABILITY

DELIVER FULL RATED
CAPACITY IN EITHER
3 OR SINGLE PHASE
POWER



JUST 19 PARTS

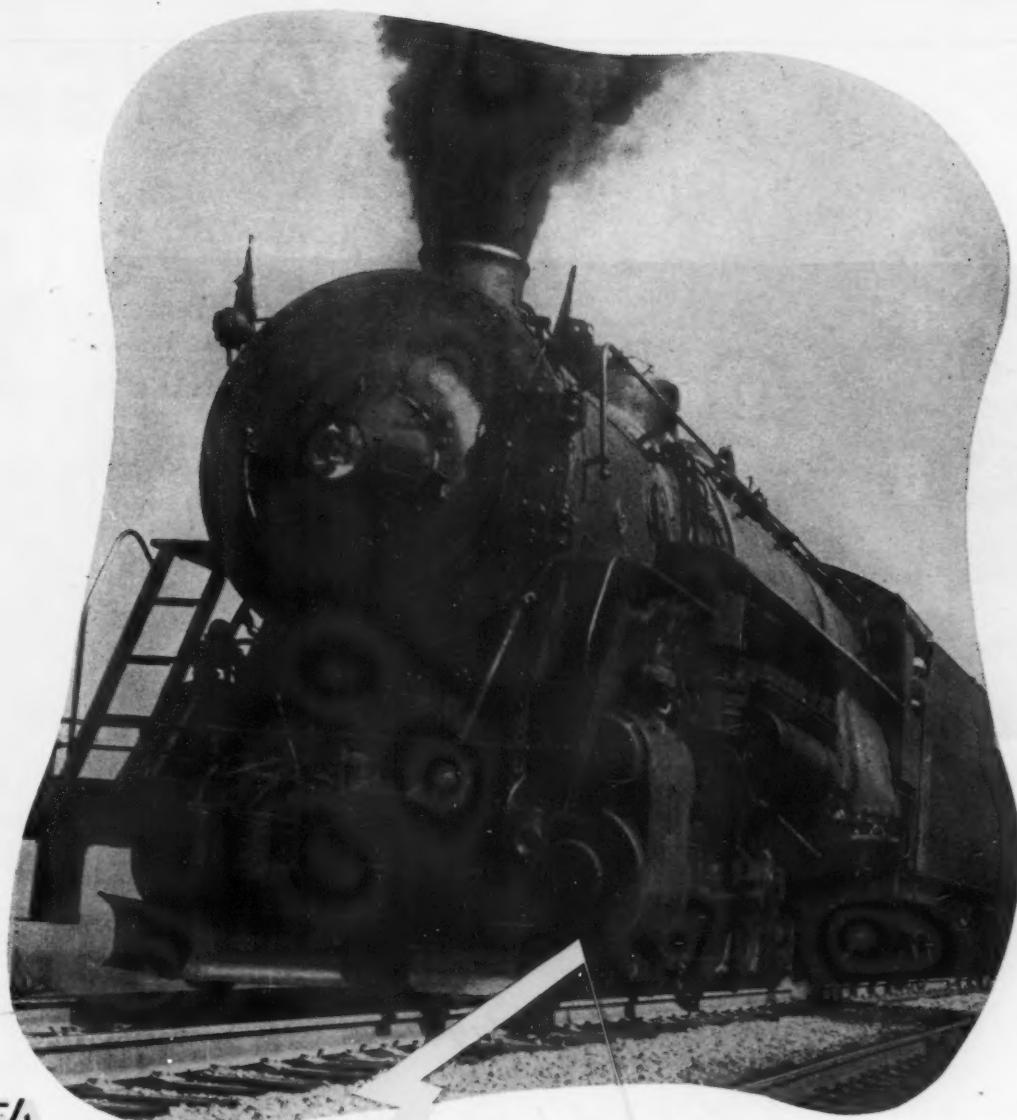
Detailed above is the Permanent Magnet Generator — used in all new Jackson Power Plants. Maintenance of these generators simmers down to nothing more than lubrication of two ball bearings operated in oil. The following troublesome features inherent in conventional generator design (see below) have been eliminated: Brushes—setting, wearing and adjustment; Brush holders and spring tension adjustment; dressing of commutators and collector rings; Commutator sparking or arcing. Note too, the tremendous reduction in component parts.



140 PARTS

HERE'S post-war planning consummated — the finest, most efficient Portable Power Plants ever known in the railroading field. Power Plants that will give you uninterrupted service 24 hours a day, day in and day out — Power Plants in which all generator troubles and necessity for adjustments and maintenance have been eliminated. They're decidedly superior to their highly rated JACKSON predecessors for operating two, four, eight and twelve tamper outfits, and for B & B gangs there is just nothing to compare with them; for in addition to unprecedented dependability they deliver full rated capacity in single as well as 3 phase power — a generous bonus of "juice" for operating lights, power tools, vibrators, etc. Don't buy any portable power plant before you have had full details on the new JACKSONS. Write today.

ELECTRIC TAMPER & EQUIPMENT CO., Ludington, Michigan



Being 50 per cent lighter than the conventional type, LFM Alloy Steel Pistons and Universal Sectional Bull and Packing Rings achieve overall locomotive economy. This economy includes a reduction in counterbalance weights, less hammerblow to track and bridges, less wear to cylinders and other parts and, finally, smoother running locomotives.

Piston economy means longer periods of first class locomotive performance. That is the reason why today LFM Alloy Steel Pistons and Universal Sectional Bull and Packing Rings are being applied to locomotives by more and more railroads.

PISTON ECONOMY



THE LOCOMOTIVE FINISHED MATERIAL CO.
ATCHISON, KANSAS * NEW YORK CITY * CHICAGO, ILL.



P
Peace and rest at length have come

All the day's long toil is past

*And each heart is whispering "Home,
Home at last"*

THOMAS HOOD

SUPERIOR ENGINES
Division of
THE NATIONAL SUPPLY CO.

Plant and General Sales Office:
Springfield, Ohio

ing

requi

tion o

We offer

meet your ex

ES

C O.

ACE

MA

GINES

PLY CO.

e:

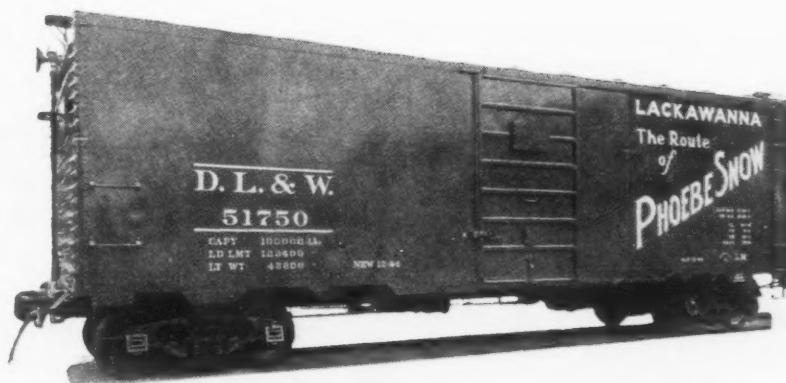
RAILWAY AGE

Magor

Revenue traffic originating grain, paper and flour require special consideration of the equipment.

We offer car designs to meet your exacting needs.

**DESIGNERS AND
MANUFACTURERS
of Freight Cars
of All Types
Including Air
Dump Cars**

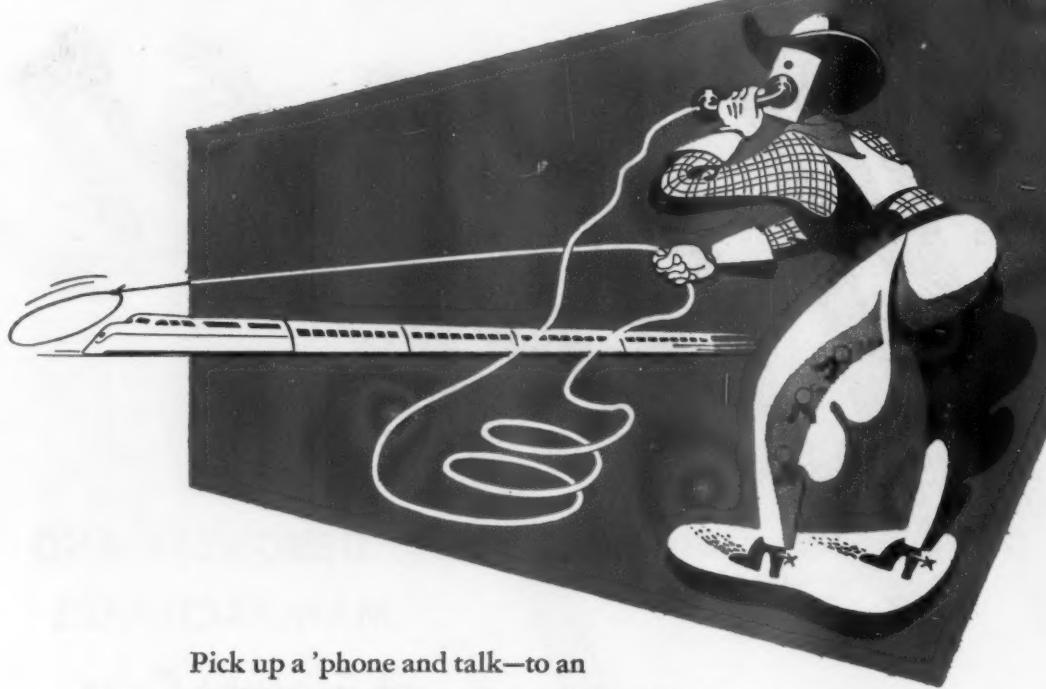


MAGOR CAR CORPORATION

50 Church Street

New York 7, N. Y.

TALK IS QUICK!



Pick up a 'phone and talk—to an airplane; a speeding train; an inter-city bus; a boat at sea.

Aireon's radio 'phones make this as simple, sure and easy as using a conventional telephone.

Aireon radio equipment for airlines is used by twenty domestic, four foreign companies; Aireon railroad radio, introduced under war-time restrictions, is *already in use* by four leading railroads. Aireon truck, taxi and bus communications equipment has been proved in service on the trucks of one of the nation's largest fleet operators. It's now in production. Aireon marine equipment will be available soon.

On the crowded highways and skyways of the future, radio 'phone communication will keep traffic moving under quick, efficient control.

Aireon
MANUFACTURING
CORPORATION

Radio and Electronics • Engineered Power Controls

NEW YORK • GREENWICH • CHICAGO • KANSAS CITY • OKLAHOMA CITY • BURBANK • SAN FRANCISCO

Modern

AUTOMATIC



END DOOR OPERATORS

open either swinging or sliding doors . . . easily and safely . . . with finger-tip control.



INSTANT RESPONSE	PRE-SET TIMING	NO PRESSURE BUILD-UP	AUTOMATIC REVERSING	POSITIVE LATCHING
The instant the latch is released, the door automatically opens — smoothly, quietly and effortlessly.	The door opens promptly, all the way. Gives ample time (predetermined) for the traveler's passage, yet closes before there is any unnecessary loss of conditioned air.	If obstructed by a passenger, the door easily is held open — or may be readily pushed wider. When released, it closes at normal speed. Never a jolt or slam.	Can't "close on" a passenger! The door motion reverses automatically at a touch of interference. N.P. mechanism is extremely responsive to the traveler's comfort.	The door closes gently and latches firmly. N.P. safety controls guard against the slightest mishap.

NATIONAL PNEUMATIC COMPANY

New York, N. Y. ★ Rahway, N. J. ★ Chicago, Ill.

WORLD'S LARGEST BUILDER OF DOOR CONTROL EQUIPMENT



FOR MASS TRANSPORTATION VEHICLES



Schaefer WEAR PLATES



Minimize Wear and Replacement



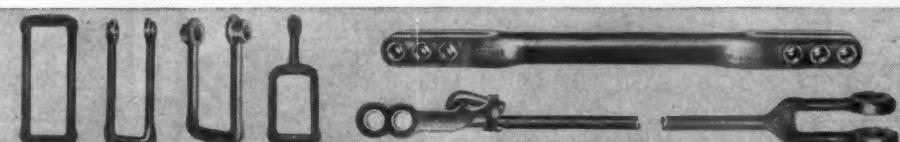
Schaefer Wear Plates protect side frame brackets—
are cheap insurance against wear.

All of our plates are oil quenched to precisely the same hardness as the Schaefer Hangers which they support—resulting in balanced wear and longer life.

Several styles to suit your needs as shown in the Schaefer Catalog. Write for your copy.

EQUIPMENT COMPANY

Schaefer



LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS . . . TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS . . . BRAKE ROD JAWS . . . WEAR PLATES . . . BRAKE SHOE KEYS



I'M NOT AFRAID ANYMORE

Folks soon forgot about that bad accident at the Locust Avenue crossing—but she was always a sensitive, impressionable child—for a long time afterward she was terrified at the thought of crossing the tracks.

Then the railroad installed WRRS Model 10 Signals. Somehow, as little girls do, she sensed the new feeling of security that came to the community as a result. In that new confidence she quickly lost her early fear of the thundering trains.

FOR THE RAILROAD—the installation of WRRS Model 10 Signals has been a completely satisfactory experience, combining the maximum factor of safety with sensational operating economies.

FOR THE COMMUNITY—there is now a new and clearer understanding of the railroad as a good neighbor, and the resulting good will has been marked by a gratifying increase in local revenues.



U. S. Pat. Numbers
2,137,196
2,362,710
2,372,579

Pat. in Canada
June 27, 1939

YOU CAN DEPEND ON MODEL 10 SIGNALS —
“Where Main Street Meets The Mainliners”

WESTERN RAILROAD SUPPLY COMPANY

2330-2360 SO. ASHLAND AVENUE, CHICAGO 8, ILL.

NEW YORK

DENVER

ST. LOUIS

CLEVELAND

HOUSTON



*Time now To
Count the
Cost...*

Through the war years, the cost of the job was secondary to *getting that job done*. But from now on, COST—both operating and maintenance—will be the all-important factor in new railroad equipment. When it comes to deciding whether "high speed" or "slow speed" will operate that equipment at lowest overall cost, don't overlook the proved-on-the-job advantages of properly applied, properly rated, properly installed *high speed* Cummins Diesels . . . their substantially lower first cost . . . their superior flexibility . . . their lower replacement parts costs . . . their easy, economical maintenance and service. *For more working horsepower per pound of engine weight*, for demonstrated reliability and long life, specify Cummins Dependable Diesels. Models from 50 to 275 hp.

CUMMINS ENGINE COMPANY, INC.
Columbus, Indiana



"Stabilized"

means an asset!"

Webster's may not define it that way, but "STABILIZED" means "an Asset" to the railroad and to the shipper when it is used in Barber STABILIZED Trucks. Barber STABILIZED Trucks by controlling the ride of freight cars assure the shipper that goods will reach their destination safely. Barber STABILIZED Trucks by preventing harmonic bounce, bolster and column wear and spring breakage assure the railroad economic operation.

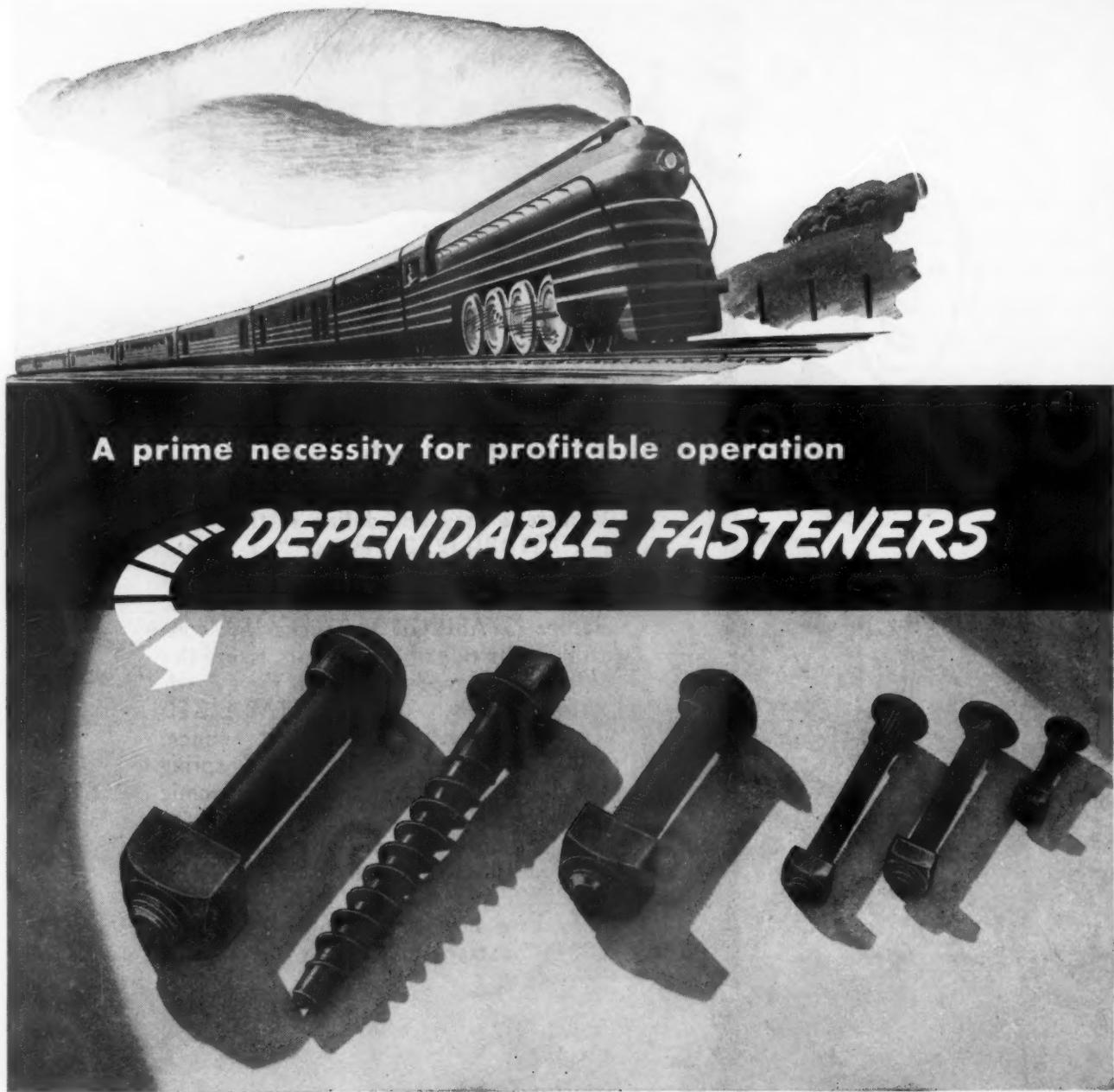
Yes, 56 different railroads and private car lines have found that "STABILIZED TRUCKS" means "an Asset" because they have now been supplied for over 100,000 cars.



STANDARD CAR TRUCK COMPANY

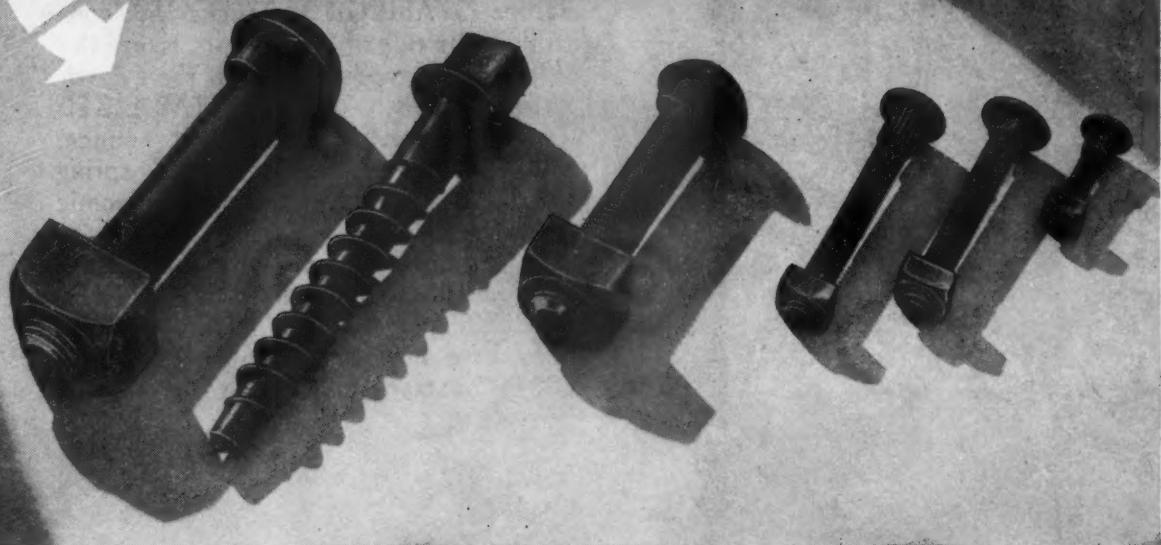
332 SOUTH MICHIGAN AVENUE

CHICAGO 4, ILLINOIS



A prime necessity for profitable operation

DEPENDABLE FASTENERS



From two standpoints, OLIVER Railroad Fasteners are a profitable specification for you. Being accurately made and cleanly threaded, they assemble faster, thus speeding shop and track construction and maintenance. Designed and made with full understanding of the requirements of railroad service, they last longer and

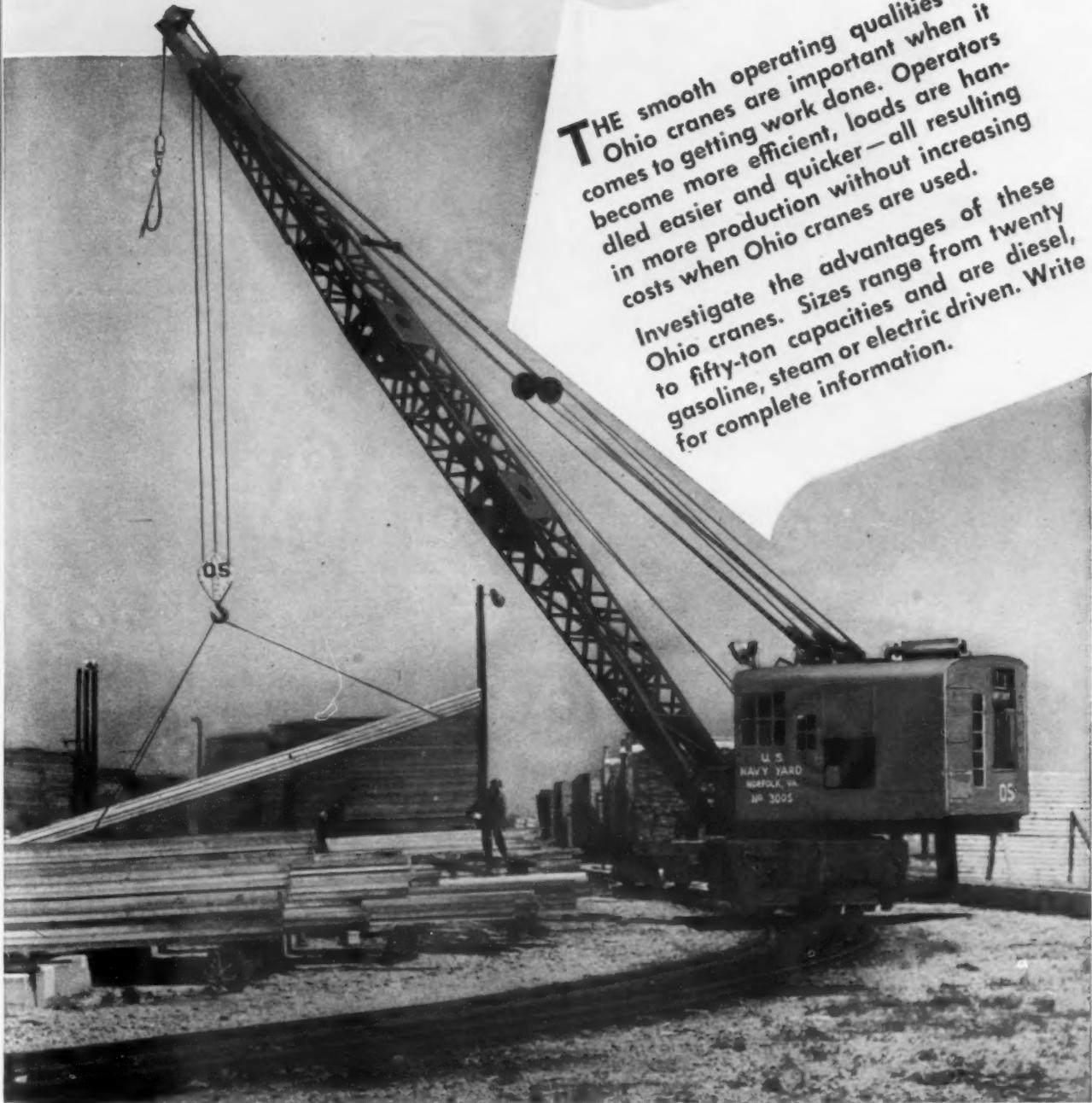
hold tighter, thus reducing maintenance and replacement costs.

Profitable operation results from the perfection of important details of fasteners. Oliver is familiar with such details and your need for dependable high quality track bolts, screw spikes, car and locomotive builders' bolts, rivets and other fasteners, and offers products that fulfill your requirements.

OLIVER
IRON AND STEEL
Corporation

SOUTH TENTH AND MURIEL STREETS. • PITTSBURGH 3, PA.

Smoothly Steadily ALL DAY LONG



THE smooth operating qualities of Ohio cranes are important when it comes to getting work done. Operators become more efficient, loads are handled easier and quicker—all resulting in more production without increasing costs when Ohio cranes are used.

Investigate the advantages of these Ohio cranes. Sizes range from twenty to fifty-ton capacities and are gasoline, steam or electric driven. Write for complete information.



LOCOMOTIVE CRANE COMPANY

Address Dept. R-BUCYRUS, OHIO

Partner of Your Research Men



To be fully profitable, the new liquid products you are developing will need low-cost bulk transportation. General American engineers can go to work now with your own scientists and research men.

GATX tank cars are designed with efficient and practical features to carry liquid commodities

that differ radically from one another. Different liquids pose different problems—GATX tank cars solve those problems.

Tell Us of Your Newly Developed Products

They can be carried safely, surely, and economically in the GATX cars made to your order.



GATX
GENERAL
AMERICAN
TRANSPORTATION
CORPORATION
CHICAGO

These are the advantages of

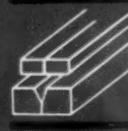
UNIONMELT

AUTOMATIC ELECTRIC WELDING

a process of welding electrically beneath a mineral melt



MAXIMUM SPEED



MINIMUM WELDING VEE



HIGH WELD QUALITY



AUTOMATIC CONTROL



MINIMUM DISTORTION



NO ROOT CHIPPING

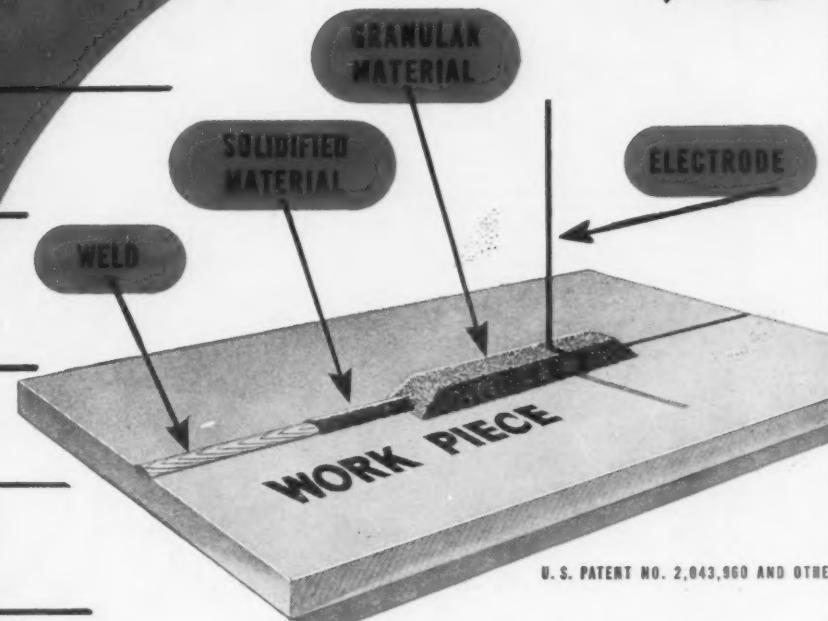


NO FINISH GRINDING



A.C. OR D.C.

The word "Unionmelt" is a registered trade-mark.



U. S. PATENT NO. 2,043,960 AND OTHERS

Low license fees and low material costs make the UNIONMELT process the most economical automatic welding method for a wide variety of uses.

Specialized engineering assistance is available to railroads licensed through The Oxweld Railroad Service Company.

BUY UNITED STATES VICTORY BONDS AND STAMPS



THE OXWELD RAILROAD SERVICE COMPANY

Unit of Union Carbide and Carbon Corporation



Carbide and Carbon Building Chicago and New York

SINCE 1912 - THE COMPLETE OXY ACETYLENE SERVICE FOR AMERICAN RAILROADS

HYDRAULIC COMFORT For BURLINGTON'S NEW VISTA DOME CAR



- Luxurious riding qualities will be a Houdaille*contribution to Burlington's thrilling new Vista Dome Car.

Improved Houdaille hydraulic instruments will provide *both* lateral and vertical control.

Houdaille Railroad Shock Absorbers stabilize and cushion the operation of America's most famous trains, many of which have seen more than a million miles of service.



HOUDAILLE ENGINEERING DIVISION OF
HOUDAILLE-HERSHEY CORPORATION
MAKERS OF HYDRAULIC CONTROLS
BUFFALO 11, NEW YORK

*Pronounced—Hoo-dye



Fine aluminum chairs are back again!

THE world's finest, most comfortable seating is the aim of G-F in making Goodform Aluminum Chairs and G-F custom-built seating equipment.

Goodform Chair 5206 is built to this high standard. It is strongly constructed on a framework of lightweight, durable aluminum. It combines the comfort of deep foam-rubber cushioning with the beauty of jewel-toned upholstery and crystal plastic arms. Like all G-F seating equipment this Goodform aluminum chair is an

economical investment in lasting service and low upkeep. See Goodform Aluminum Chairs NOW at G-F Dealers and G-F Branch Offices, or write to us for literature.



THE GENERAL FIREPROOFING CO.
YOUNGSTOWN 1, OHIO

NATIONAL K-4 Friction Draft Gears

were designed to promote riding comfort in passenger train service.

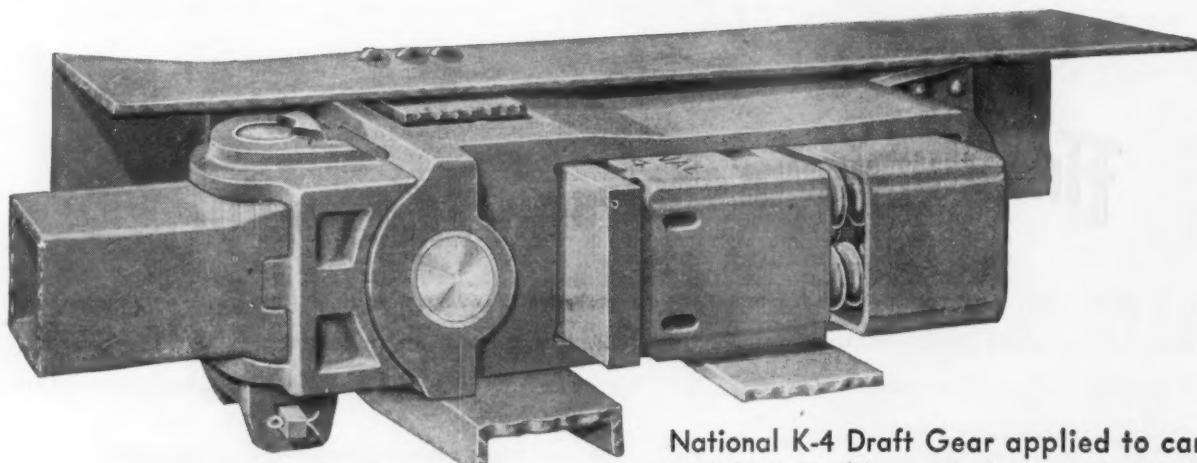
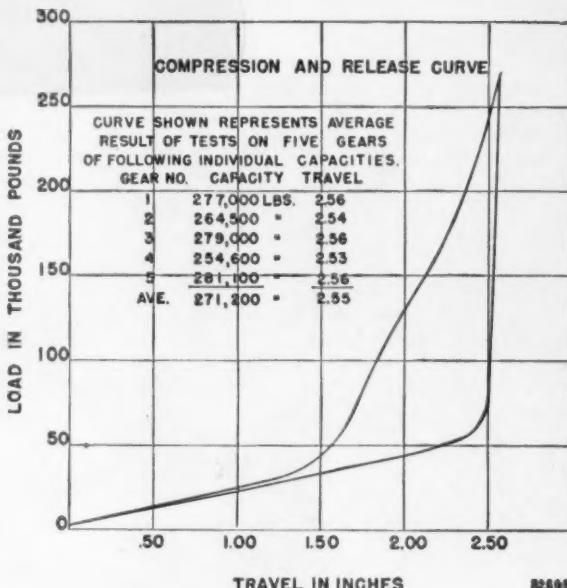
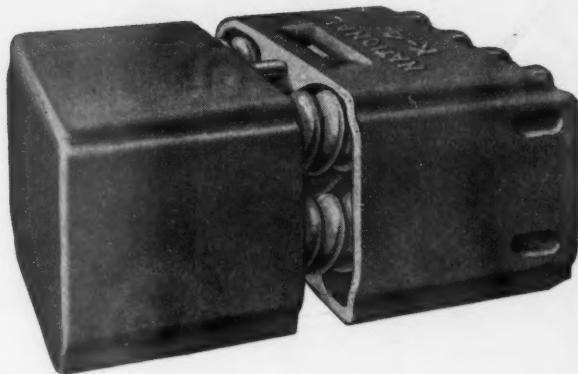
National K-4 Gears start action smoothly, gradually building up resistance sufficient to absorb the heavy blows without shock, and release quickly and smoothly.

The friction system in the K-4 Gear releases first and is always available to cushion a quick succession of blows.

A K-4 Draft Gear applied to the tender will insulate the cars from pulsations from the locomotive.

This gear meets the A.A.R. recommendations for passenger equipment type of draft gears.

The chart at the right shows the smooth action of these gears.



National K-4 Draft Gear applied to car with Tightlock Coupler, swivel connection and yoke.

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Offices: CLEVELAND OHIO

Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco.
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.



Notes on
STEEL CASTINGS

You can see
PSF
QUALITY
as well as
Prove it...



W&D 9892

One glance at the typical car truck bolster and side frame castings, illustrated above, gives you a clear impression of the sound, clean-cut strength and uniform grain structure that characterize all PSF Castings. But you can go much farther than that. In PSF's modern laboratories, you can get check-tests on strength, hardness, analysis and texture . . . you can even utilize the best proof of all—the penetrating eye of a million-volt X-Ray.

• PSF employs the latest methods and equipment to produce quality castings—carbon or alloy steels, up to 100,000 pounds. Let us figure on your work.

47 YEARS OF STEEL CASTING KNOWLEDGE

Pittsburgh
STEEL FOUNDRY CORPORATION

Glassport, Pa. • Fort Pitt Steel Casting Div., McKeesport, Pa. • Pittsburgh Spring and Steel Co. Div., Pittsburgh, Pa.

Sales Offices: NEW YORK • PHILADELPHIA • CHICAGO • CLEVELAND • CINCINNATI • AKRON • WASHINGTON



PROTECTION



FOR FREIGHT CARS AND LADING

PEERLESS H-I-B DRAFT GEARS

BY ABSORBING the shock under all traffic conditions, PEERLESS H-I-B Draft Gears provide the protection needed to keep freight cars and lading from being damaged. These positive PEERLESS features assure such protection:

**Light Weight
Low Recoil**

**High Absorption
Positive Release
Long Service Life**

**Smooth Action
Well Engineered Design**

PEEPLESS EQUIPMENT COMPANY
310 S. MICHIGAN AVE. CHICAGO 4, ILLINOIS



**FOR RESISTANCE TO ABRASION
... NO OTHER MATERIAL CAN EQUAL
ALLOY STEELS**

• When locomotive parts like that above, or any machine parts with bearing surfaces, slide back and forth, or turn 'round and 'round, there's bound to be abrasion. And abrasion means wear, unless the parts that slide and turn are hard enough to resist abrasion.

When it comes to hardenability, no other material can equal alloy steels. That's why so many vital operating parts in all kinds of equipment are made of these finest of steels.

Alloy steels can be surface hardened or deep hardened to predetermined degrees of hardness with greater assurance of results than any other material. Their uniform response to hardening insures against non-hardened areas or soft spots in wearing surfaces.

But that's only one advantage of using alloy steels. Their high strength-to-weight ratio permits the use with safety of lighter equipment and smaller sections. Their super-toughness provides protection against severe shocks, reversal of stresses or sudden overloading. Their resistance to fatigue, heat, cold and corrosion means long life and lower costs for equipment in which they are used.

Would you like to know what alloy steels can do for you? Republic—world's leader in this branch of steel making—is ready to tell you whenever you're ready to listen.

REPUBLIC STEEL CORPORATION

Alloy Steel Division • Massillon, Ohio

GENERAL OFFICES • CLEVELAND 1, OHIO

Export Department: Chrysler Building, New York 17, N.Y.



**Republic
ALLOY STEELS**

Also Carbon and Stainless Steels—Sheets—Plates—Pipe—Upright Bolts, Nuts and Rivets—Electro-nite Boiler Tubes

Railway Lighting Ideas

by LURELLE GUILD



"The illumination afforded is cool, diffused and glare-free." So states Lurelle Guild, noted industrial designer, in referring to "correct lighting" . . . "fluorescent illumination at its finest," for his observation-lounge railway car.

You can obtain fluorescent lighting that meets these requirements, from specialists in the lighting field . . . Sylvania Electric Products Inc., Salem, Mass.

Fluorescent Lamps and Electric Light Bulbs by SYLVANIA

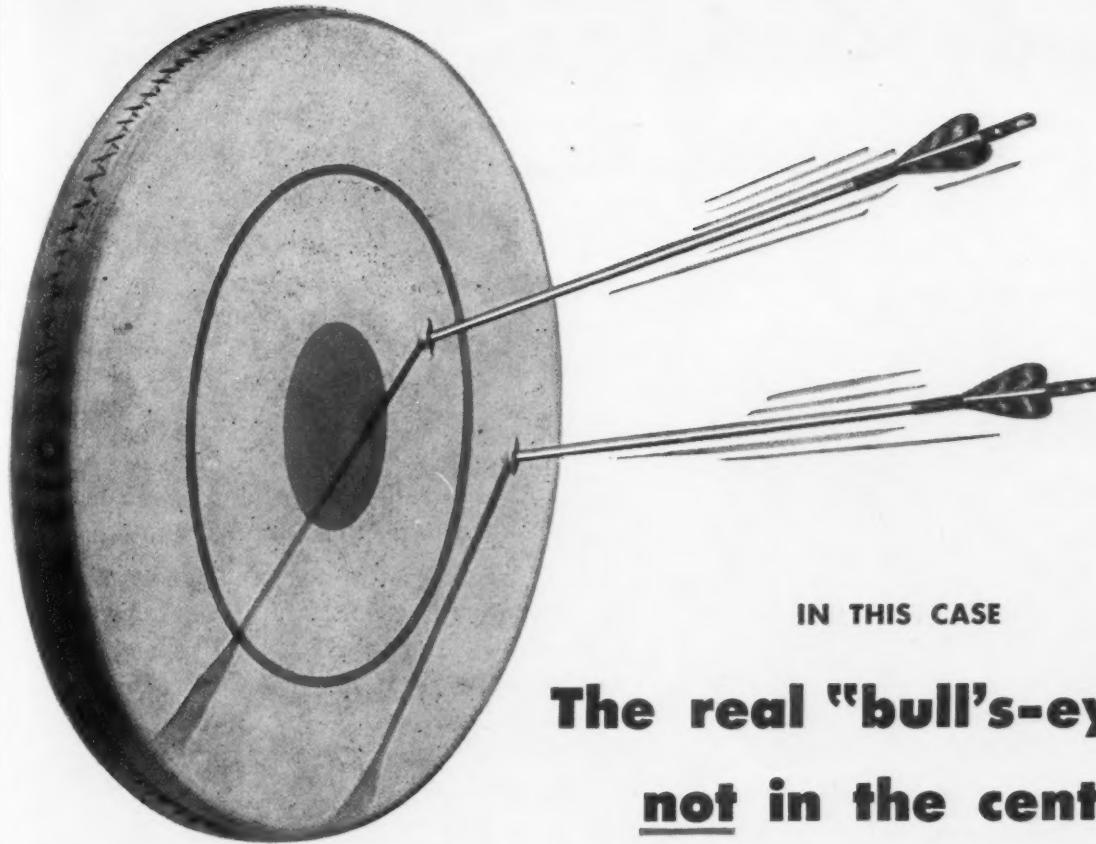
"The observation-lounge railway car is, by far, one of the most popular additions to the modern, streamlined train," notes Lurelle Guild, well-known industrial designer.

"In keeping with the spirit of comfort, relaxation — which is the keynote in the design of this car — is the use of fluorescent illumination at its finest.

"This *correct* lighting, as shown above, is obtained from long fluorescent lamps, plus tubing — hair-pin curved at both extremities of the car to blend with the contours of the headliner. The illumination afforded is cool, diffused and glare-free."

SYLVANIA ELECTRIC

MAKERS OF FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

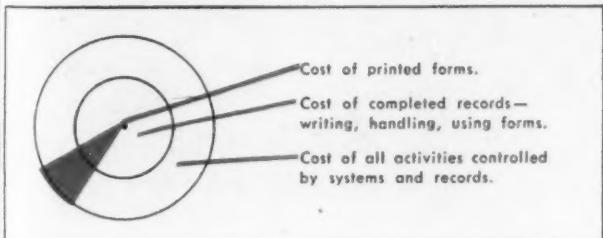


IN THIS CASE

The real "bull's-eye" is not in the center

Right now, top management is shooting at *major* cost savings—the kind that can strengthen the competitive position of a company, enable it to offer *more for less*.

That's why you'll find more and more executives setting their sights, not on inconsequential savings in the cost



of printed forms—but on the *broader circles* of savings that can be effected through scientific paperwork simplification. For, today, they recognize that the cost of writing, handling, routing and filing forms adds up to from 10 to 50 times the cost of the forms, themselves.

More important, they realize that improved form design, writing methods and procedures put them on the *real* bull's-eye—*better management control*. Which can mean

five-and-six figure savings as well as *better* products and services, better dealer and customer relations.

Such Savings are Continuous

Savings effected through Standard's Kant-Slip Continuous Forms and systems (based on scientific analysis and proved paper-work simplification methods) are not just a "one shot." They *keep right on* saving for you. Standard makes *sure of* this. On every reorder of forms, Standard makes a thorough recheck of form design, writing methods and procedures. In addition, a regular periodic check is made of all mechanical equipment.

Let us show you how much **MORE** Standard methods can save for you, how much more Standard offers. See for yourself what *continuous paper-work simplification* can mean in better control at less cost.



WRITE TODAY for free booklet,
"A New Frontier In Business."
It offers a new conception of
forms as tools of control,
integrated into systems that
save money.

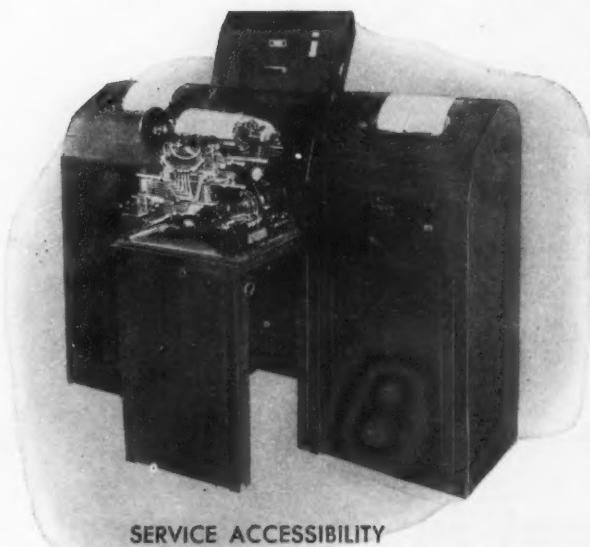
THE STANDARD REGISTER COMPANY

Manufacturer of Record Systems of Control for Business and Industry

DAYTON 1, OHIO

Pacific Coast: Sunset McKee-Standard Register Sales Co., Oakland, California. Canada: R. L. Crain, Limited, Ottawa. London: W. H. Smith & Son, Ltd.

Better Railroad Communications — with TELETYPE

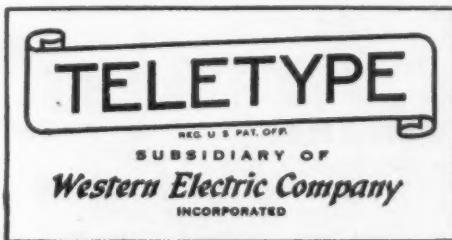


SERVICE ACCESSIBILITY
IS A FEATURE OF
THESE CONSOLES

To assist you in planning efficient communications centers, compact arrangements of automatic transmitters and reperforators have been designed.

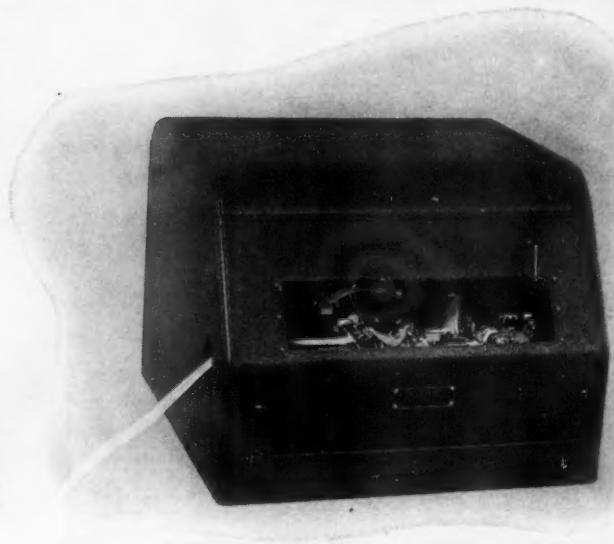
The Teletype Model 14 Reperforator Transmitter Distributor shown here combines the printing reperforator and the automatic transmitter distributor in one compact unit. In this model the message is printed directly on the perforated tape for ease and speed of handling.

*Buy all the
Victory Bonds you
can—and keep them!*



Teletype equipment has been redesigned to meet the growing needs of the railroads for faster, more dependable communications. Teletype engineers have worked with users to produce the type of equipment best suited to fill their requirements.

Typical of the advances growing out of this cooperation are the new console cabinets which readily lend themselves for use in groupings such as that shown here.



REPERFORATOR TRANSMITTER DISTRIBUTOR

PLAN AHEAD WITH TELETYPE

Teletype engineers will be glad to cooperate with you if you wish to modernize your communications facilities. Send for details now. Teletype Corporation, 1400 Wrightwood Ave., Chicago 14, Ill.



Westinghouse Renewal Parts

- are Easy to Install
- are Interchangeable
- give Longer Life
- need Less Maintenance

WESTINGHOUSE RENEWAL PARTS FOR TRANSPORTATION INDUSTRY

- Armature and Field Coils
- Shafts and Bearings
- Brushes and Brushholders
- Commutators and Assembled Segments
- Control Parts
- Control Accessories
- Control Switches
- Type M, TM or MA Resistors

Here is one way to help keep your transportation equipment in running order. Take advantage of the Westinghouse Maintenance Service.

Designed for quick installation, easy maintenance . . . and interchangeability, these Westinghouse Renewal Parts include many modern improvements to give longer life to your electrical apparatus. Using them results in "less time out" for your equipment—"more time in" to meet today's peak transit periods.

There are 34 Westinghouse Repair Plants to assist you in maintaining your equipment. Renewal parts are quickly available from the 17 completely stocked Westinghouse Renewal Parts Warehouses strategically located throughout the country. Call your nearest Westinghouse office, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-15105

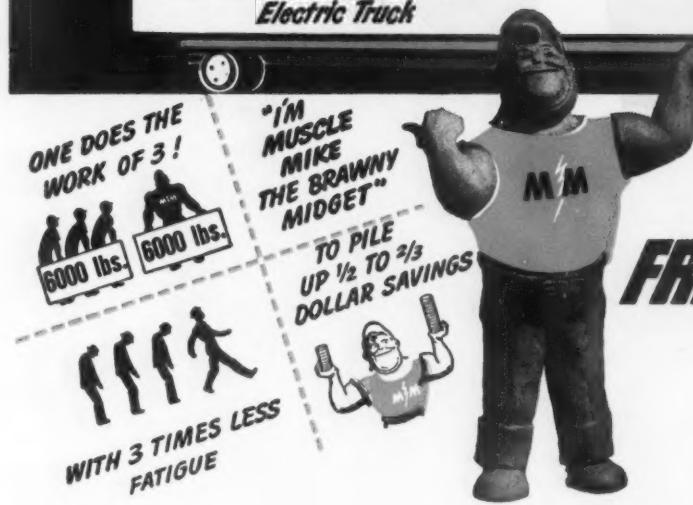


Westinghouse RENEWAL PARTS

FREE PROOF!

That "Muscle Mike" Can Cut Your Handling Costs in HALF!

with Industry-Tested Miracle Electric Truck



It's Yours to Use FREE in Your Own Plant For 3 Days!

**to demonstrate it will cut YOUR
handling costs at least IN HALF**

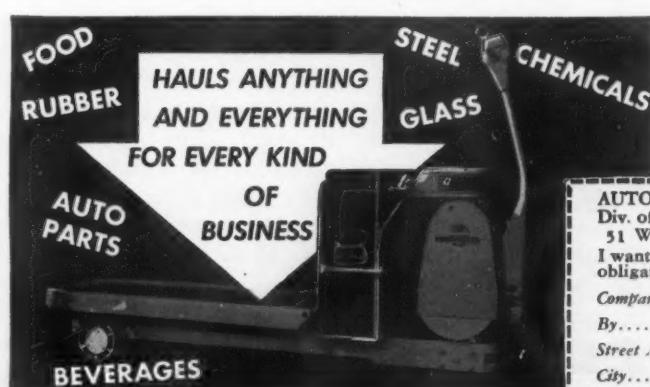
All industry is using this Miracle Electric Truck. In its motor is a Muscle Mike . . . a brawny midget of electric power that moves up to 6000 pounds with amazing "touch-of-your-thumb" ease.

Its name is Automatic Transporter. You haven't a handling job it can't lick. One man or girl at the control buttons does the work of three husky laborers. That's two-thirds saving in labor alone. Forget about drudgery and fatigue. It's next to nothing. Take it in and out of tight places that would put even hand trucks

to shame. It comes through for you without a whimper.

But don't take our word for it. Put it to the test . . . put it over the severest hauling hurdles in your own plant. See if it doesn't do for you, the great job it has been doing for industry everywhere. Mail the coupon, and we will arrange delivery. First come, will of course, be first served. There is absolutely no obligation to buy . . . no strings attached whatsoever.

Remember: Only AUTOMATIC Makes the TRANSPORTER



AUTOMATIC TRANSPORTATION COMPANY
Div. of The Yale & Towne Mfg. Co.

51 West 87th Street, Chicago 20, Illinois

I want to put Automatic Transporter to work for me for 3 days free of all cost and obligation. Deliver it to my plant at as early a date as possible.

Company Name.....

By..... Position.....

Street Address.....

City..... State.....

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 119

December 15, 1945

No. 24

PUBLISHED EACH SATURDAY
BY THE SIMMONS-BOARDMAN
PUBLISHING CORPORATION, 1309
NOBLE STREET, PHILADELPHIA
23, PA., WITH EDITORIAL AND
EXECUTIVE OFFICES AT 30
CHURCH STREET, NEW YORK 7,
N. Y. AND 105 W. ADAMS STREET,
CHICAGO 3, ILL.

WASHINGTON 4, D. C.: 1061 NATIONAL PRESS BUILDING, CLEVELAND 13: TERMINAL TOWER, SEATTLE 1: 1033 HENRY BUILDING, SAN FRANCISCO 4: 300 MONTGOMERY STREET, ROOMS 805-806, LOS ANGELES 14: 530 WEST 6th STREET, DALLAS 4: 4518 ROLAND AVENUE.

SAMUEL O. DUNN, CHAIRMAN.
HENRY LEE, PRESIDENT. ROY
V. WRIGHT, VICE-PRESIDENT AND
SECRETARY. F. H. THOMPSON,
F. C. KOCH, R. E. THAYER, H. A.
MORRISON, J. G. LYNE, H. E.
McCANDLESS, VICE-PRESIDENTS.
J. T. DEMOTT, TREASURER.

SAMUEL O. DUNN, EDITOR. ROY
V. WRIGHT, MANAGING EDITOR.
JAMES G. LYNE, ASST. TO EDITOR.
CHARLES LAYNG, WESTERN
EDITOR. C. B. PECK, ALFRED G.
OEHLER, E. L. WOODWARD, J. H.
DUNN, H. C. WILCOX, NEAL
D. HOWARD, GEORGE E. BOYD,
WALTER J. TAFT, M. H. DICK,
JOHN S. VREELAND, C. L.
COMBES, C. MILES BURPEE,
ARTHUR J. McGINNIS, C. B.
TAVENNER, H. E. MEASON,
CHARLES ROBINSON, MAURICE
PEACOCK. LIBRARIAN: EDITH
C. STONE. EDITORIAL ASSISTANT:
BETTY KETCHUM.

RAILWAY AGE IS A MEMBER OF
ASSOCIATED BUSINESS PAPERS
(A. B. P.) AND AUDIT BUREAU OF
CIRCULATION (A. B. C.).

SUBSCRIPTIONS, INCLUDING 52
REGULAR WEEKLY ISSUES, AND
SPECIAL DAILY EDITIONS PUBLISHED
FROM TIME TO TIME IN NEW YORK OR IN PLACES
OTHER THAN NEW YORK, PAYABLE
IN ADVANCE AND POSTAGE
FREE. UNITED STATES, U. S.
POSSESSIONS AND CANADA: 1
YEAR \$6.00; 2 YEARS, \$10.00;
FOREIGN COUNTRIES, NOT INCLUDING
DAILY EDITIONS: 1
YEAR, \$8.00; 2 YEARS, \$14.00.
SINGLE COPIES, 25 CENTS EACH.
H. E. McCANDLESS, CIRCULATION
MANAGER, 30 CHURCH STREET,
NEW YORK 7.

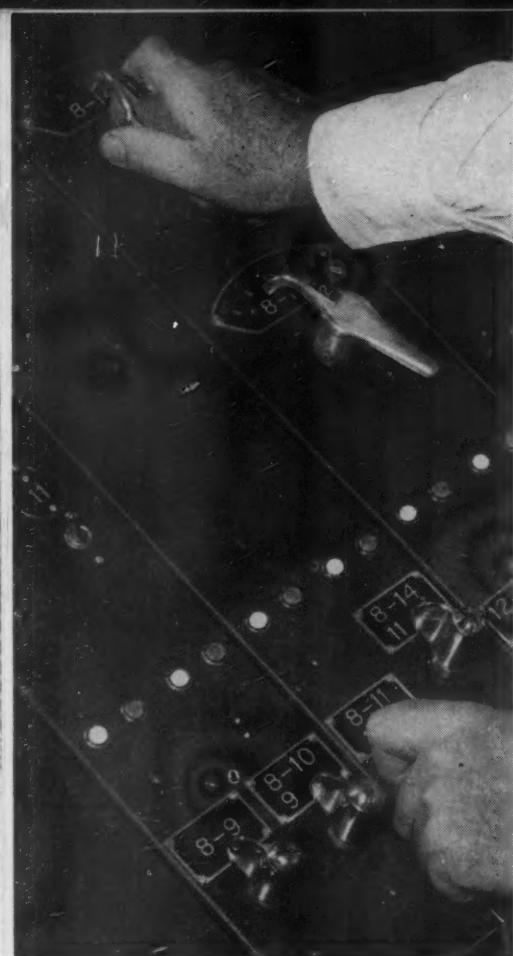
In This Issue

	Page
The Last Fifty Years—and the Next	970
After a lifetime of participation in the development of American motive power, Dr. Joseph B. Ennis of American Locomotive, foresees a future of increased opportunities in railway transportation.	
Enlarge, Modernize Locomotive Shops	973
Essentially "war born," the new facilities of the Northern Pacific at Livingston, Mont., described herein, meet the needs of larger steam power purchases of the past 10 years.	
R. R. Credit Requires Fair Deal to Stock	980
Economist Elisha M. Friedman suggests convertible bonds as a device to scale down debt and urges Congress to enact principles of Hobbs bill as a matter of justice as well as expediency.	
EDITORIALS	
Low Rates for Heavy Loads Should Build Traffic.....	967
"Air-Conditioned" Cabs.....	968
Must Pull Together.....	968
Freight Cars Still at "War".....	968
Railways Hit a Home Run.....	969
Measuring Light in Dollars.....	969
GENERAL ARTICLES	
The Last Fifty Years—and the Next, by Dr. Joseph B. Ennis	970
Enlarge, Modernize Locomotive Shops.....	973
Crowley and Scandrett Head Milwaukee.....	979
R. R. Credit Requires Fair Deal to Stock, by Elisha M. Friedman	980
Commissioners Hold "Victory" Meeting.....	984
Electrical Section Reports.....	987
Johnson Honored at Testimonial Dinner.....	990
September Purchases \$132,754,000.....	992
GENERAL NEWS	
	993
WITH THE GOVERNMENT AGENCIES	
	999

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service



PRINTED IN U. S. A.



On 16 car retarder installations return on investment averaged 42%

The experience of many railroads shows that actual cash savings through reduced operating expenses make the installation of "Union" Electro-pneumatic Car Retarder systems one of the most profitable of railroad investments.

As long ago as 1934, a study by the Signal Section of the A.A.R. of 16 Car Retarder installations showed an average estimated return on capital investment of 42.86 per cent. In five cases, the return on investment was over 60 per cent. In one case, the return was 37.83 per cent, though traffic averaged only 768 cars in 24 hours.

It should be noted that these savings were made *during the depression*, when railroad traffic was at its lowest point. As the number of cars handled increased, there was a corresponding increase in the rate of return on the investment.

Our engineers will be glad to show you where and how "Union" Electro-pneumatic Car Retarder installations will speed up traffic and help you meet post war competition.

UNION SWITCH & SIGNAL COMPANY



NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO



PRI

STYMI
progress
agement
mands fo
bedding,
the oper
along wit
ceddings
present,
have lin
pay be u
of the op
more mo
the non-c
50-odd r

CAB CO
most ste
try in w
would ra
and Dies
vision m
their cab
itorial dis
motive d
it might
little eff
both as
and as a
formance
with bett

UP TO
went to
the respo
acceptanc
Pullman
dence and
of which
effort wa
Justice t
should t
schemes
roads, an
advanced
port of t
inherently
coaches
same co

BUYIN
aterials, s
equipment
this year
two per
same per
in 1943
cent larg
no war-t
figures f
tember a
issue.

STRON
analysis
railroad
tributed
He sugg
fiscated
ands of
activities
realities
e says,
holders,

The Week at a Glance

STYMIED SETTLEMENT: Little progress has been made in the union-management conferences on the brothers' demands for bigger pay and more featherbedding, it is noted herein, because two of the operating unions have refused to go along with the others in expediting the proceedings by narrowing the issues, for the present, to the wage increases. The non-ops have lined up behind a proposal that their pay be upped 30 cents an hour, and three of the ops are equally ready to agree that more money is their primary objective, but the non-conformists were still plugging for 50-odd rule changes as well.

CAB COMFORT: One characteristic of most steam locomotives used in this country in which practically unanimous opinion would rate them inferior to their electric and Diesel-powered competitors is the provision made to shelter the occupants of their cabs from winter weather. An editorial discussion of this peculiarity of locomotive design raises the question whether it might not be worth while to devote a little effort to make cabs more livable, both as a matter of justice to employees and as a means of securing the better performance that, generally speaking, goes with better working conditions.

UP TO THE COURT: As this issue went to press, the three judges who have the responsibility of passing on the vendor's acceptance of the railroads' bid for the Pullman Company were pondering the evidence and the harangues of counsel, a digest of which appears in our news pages. No effort was spared by the Department of Justice to show the court which way it should take to disconcert the devious schemes of the monopolistic-minded railroads, and a most remarkable argument was advanced by the "people's lawyer" in support of the idea that there's something inherently wrong about the sleeping cars and coaches in a train being owned by the same company.

BUYING RECORD: Purchases of materials, supplies and fuel (not including equipment) for the first nine months of this year, by Class I railways, were about two per cent under the 1944 total for the same period, but substantially greater than in 1943 and 1942, and no less than 42 per cent larger than in 1941, when there were no war-time restrictions on materials. The figures for the nine months and for September are analyzed in an article in this issue.

STRONGER EQUITIES? A cogent analysis of proposed legislation to modify railroad reorganization procedures is contributed this week by Elisha M. Friedman. He suggests that the I. C. C., having confiscated the property of hundreds of thousands of stockholders with its "wringer" activities, ought to adjust its tactics to the realities of a changed situation. It should, he says, make an effort to save the stockholders, rather than trying to save its face.

One means by which this could be done, this authority observes, is by passing the Hobbs bill, which has been held up in the Senate since February. And he proposes other means of relief that might be employed to improve the credit standing of railroad equities, such, for example, as more frequent use of convertible bonds.

LOAD-RATE RELATIONSHIP: If "alternative minima" rates are to result advantageously for the railroads, they should be looked upon as a means by which the traffic departments can secure the maximum available volume of traffic, and not simply as a device to handle a lesser quantity of traffic, most of which presumably would be available anyhow, at lower operating expense. In other words, the principal objective of such rates should be, not economy *per se*, but more business. Given that, economy and efficiency can be secured without too much difficulty. Moreover, the leading editorial this week points out, the amount of business the railroads get in the future is bound to depend to a considerable extent on whether shippers are geared to work with truckload or carload quantities of materials. It would be to the railroads' advantage if the shipper is persuaded, by favorable rates provided for movements of that character, to adapt his operations to unit loads of maximum size, even if the carrier has to pass along all the direct savings resulting from the heavier loading, because more freight would move by rail under those conditions.

CONFIDENCE: The best decades for the railroads lie ahead—this is the studied opinion of Dr. Joseph B. Ennis, senior vice-president of American Locomotive, after a half-century's experience in the industry. The address which he made on occasion of the fiftieth anniversary of his association with that company appears in this issue. There is plenty of competition for the railroads in the offing, to be sure, he says, and it's up to the railroads to exploit their own advantages to the utmost, to increase the number of young people in the ranks of railroad men, and to make a special effort to "sell" the railroad as a transportation agency to the young people of today, who are the travelers and shippers of tomorrow.

LEADER LAUDED: One permanent agency in which all government authority over transportation would be concentrated was advocated by O. D. T. Director Johnson in his address December 6 at the dinner in Washington given in his honor by the A. A. R. The O. D. T. is "fading away," even if not quite so rapidly as was expected earlier, but its experience during the war has convinced its director that the powers of the I. C. C. and all the other commissions dealing with carriers ought to be under a single control. As reported in the news pages, Colonel Johnson's contribution to the war effort was described in a formal tribute representing the views of the heads of the War and Navy departments as well as the railroad associations.

PLANNING TO SPEND: Basing its predictions on answers to its "questionnaire" which the Class I roads supplied, the I.C.C. statistics bureau looks for expenditures in the neighborhood of \$1.6 billion for road and equipment in the three years following the war's end. And, as noted in the news columns, it also has been inquiring into the means that will be resorted to in financing these expenditures. A large part of the new money is expected to come from current earnings, a good bit from bonds or other forms of indebtedness, and some from reserves set aside for such purposes. Not a cent is expected to be obtained from equity issues—a fact of special significance in any analysis of the credit standing of railroad stocks. After the owners of capital have had so much opportunity to see what happens to equities when railroads get involved in reorganization proceedings, it isn't to be wondered that they are more than cool to new railroad stocks.

ELECTRICAL SECTION: Among the topics treated in reports of committees of the Electrical Section of the A. A. R. engineering division, abstracted hereinafter, were the following: electrolysis of steel in concrete; application of wind-driven battery chargers; de-icing coal chutes; improvements in motors; advantages of direct drive for machine tools; and new ideas in illumination.

MONTANA SHOPS: An expansion and rearrangement of the Northern Pacific's locomotive shop facilities at Livingston, Mont., has been necessitated by that road's acquisition, in the past ten years, of many large power units for which the old set-up was inadequate. An illustrated article herein describes in some detail the general construction features of the new shop, new stores building and supplemental installations. Among other improvements is the extensive use of fluorescent lighting.

STATE SOVEREIGNTY: The state commissioners, meeting last week at Miami Beach, expressed themselves in favor of more state regulatory power, particularly over track and airline operations, and in opposition to greater concentration of authority in the federal regulatory agencies. But Judge Summers told them that the process of centralizing power in the federal government is going to continue so long as the states dump all their difficulties in the federal government's lap, and particularly while they rely on "federal aid" appropriations of millions and billions for the provision of airports and highways.

IN BRIEF: President Truman's signature has finally made land-grant rate repeal effective. . . . The Bulwinkle bill has passed the House. . . . Attorney General Clark wants the railroads to know he's smiling when he calls them conspirators. . . . An additional 1,000 coaches have been taken out of regular train service—14 per cent of the capacity available—to meet the need for more cars to move troops out of West Coast ports.

CABLE LIFE "PRE-VIEWED" BY YEARS OF EXPOSURE

Okonite's Proving Ground Duplicates Actual Operating Conditions

All kinds of weather and four kinds of soil provide thoroughgoing performance "pre-views" at the cable proving ground at The Okonite Company's Passaic, New Jersey plant.

About to start its ninth year of carefully-recorded cable service studies, this unique *outdoor laboratory* is dedicated to evaluating the useful life of all types of insulation both above and below ground under all severe operating conditions. Believing that time and time alone is the only true means of determining what a cable will do, Okonite engineers put principle into practice with the realistic creation of actual service conditions rather than artificial "accelerated aging".

Buried directly in various types of earth, pulled into conduit or installed overhead — network, control, primary distribution and portable power cables are constantly operating under controlled conditions of temperature, voltage and loading.

At specified intervals they are taken up, sections cut from the cable and detailed tests conducted under the independent supervision of The Electrical Testing Laboratories.

Test Conditions

Cables under test are installed in four concrete troughs, each 50 ft. long by 4 ft. wide and 4 ft. deep. These troughs, open at the bottom, are each filled with a different type of soil:

1. Top soil saturated with corrosive water from a manhole.

2. Soil with a layer of manure over the cables to simulate conditions of decaying organic matter.

3. A mixture of 99 lb. of sand and 1 lb. of lime which is subjected to a periodic pH test and maintained highly alkaline.

4. Soft-coal cinders regularly wet with a sulphuric acid solution to render them positively acid. Given a regular pH test and acidity maintained.

Cables in each trough are in two layers. Spacing of cables was selected to allow control and signal cables to be slightly warmed by network cables which are subjected to current loading. The majority of cables are buried between 30 in. and 36 in. deep.

Buried Since 1937

Four main types of cables are installed in the troughs in the proving ground.

1. Network cables. Nine cables representing all constructions, including fibrous and rubber covered; 250,000 circ. mil. single-conductor, insulated for 600 volts, operating at 120 volts and loaded in cycles nine hours a day, five days a week, to give a copper temperature of approximately 60 deg. C. Network cables in all troughs are in series across 120 volts.

2. Control cables. Eleven seven-conductor, rubber insulated cables with various types of metallic and non-metallic sheaths in each trough energized at 120 volts but not loaded.

3. Underground primary distribution ca-

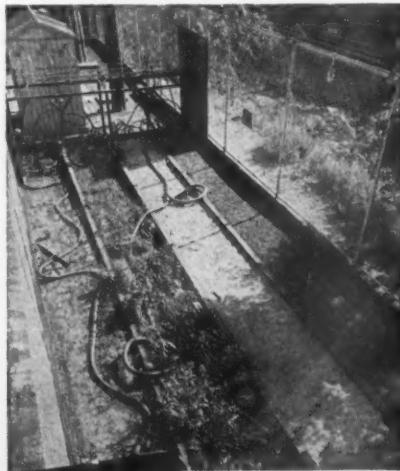
bles. Four different commonly-used types of 5-kv. non-metallic sheath cable in each trough energized at 7.6-kv. but not loaded. Each trough contains 50-ft. lengths of each type of cable.

4. Portable high-voltage cable. Two types, shielded and non-shielded, 12.5-kv. three-conductor, dredge or shovel cables run at random in the yard on the top of the ground and moved each week. Two types are connected in series and ends connected to 12.5-kv. busbars.

In addition to the underground cables, two 30-ft. poles have been erected carrying more than a dozen types of insulated aerial cable and line and tree wire energized at 7.6-kv. from the busbar structure. Interconnecting these overhead "circuits" are three conduit risers on each pole containing four test cables each.

As tests are tabulated, valuable trends have already been disclosed. While eight years are too short for final conclusions, proving-ground results have indicated significant tendencies. For example, in the case of exposed cables, Okolite-Okoprene (Patent 2,312,058) is showing to advantage over the fibrous type of rubber insulated cable which has suffered braid deterioration, tape erosion and corona cutting.

This is but one instance — one forerunner of benefits to come. As time goes on and more and more facts accumulate, Okonite engineers will be guided to a greater degree by this recorded test data, and will pass along greater service-life knowledge in the form of improved electrical wires and cables. The Okonite Company, Passaic, New Jersey.



Underground portion of proving ground at end of first full year of operation.



Cables are periodically exhumed, sections removed, ends sealed for reburial.

OKONITE

OKONITE
SINCE 1878

insulated wires and cables



RAILWAY AGE

Low Rates for Heavy Loads Should Build Traffic

In the discussion of whether or not "alternative minima" rates should be offered by the railroads—in order to induce maximum loading of freight cars—there is an important consideration beyond that of promoting economy in operation and in the use of equipment which does not seem to be receiving as much attention as it merits.

Rigorous economy in the use of equipment has been for several years, and still is, one of the most important factors in successful railroading—but, before long, this factor will wane in importance as a railroad objective, in comparison to the provision of a quality and economy of service which will draw traffic to the railroads, as against the attractions offered by competing agencies of transportation. If undue attention is concentrated on the achievement of immediate contributions to net operating revenue in determining the magnitude of the incentives to be offered to shippers to induce the continuance, as far as possible, of war-time practices in the heavy loading of cars, the effort may be moderately successful; but, if only modest results are attained, the project will do much less than it could toward solving the railroads' major traffic problem.

The primary goal of the railroads for the future is not—or at least should not be—the movement of such traffic as is offered to them at the minimum operating expense. Rather, their principal objective is or should be the attraction and retention of a large volume of traffic. If they can secure, first, large traffic volume, the handling of that traffic efficiently and economically will be, relatively, a much easier assignment than can possibly be the case if they put the cart before the horse, looking for the economy before they look for the traffic.

If, on the other hand, "alternative minima" are viewed by the railroads primarily as a means of permitting rate concessions which cost considerations would otherwise prohibit—and thus of attracting and holding traffic which otherwise would be lost—then both the railroads and the shippers are likely to enter upon the application of this device with more enthusiasm, and certainly with more assurance that it will accomplish mutually advantageous results. Viewed in this light, the inducements toward quantity shipments offered by rate reductions for heavy loading should not be barely the minimum necessary to bring about some such loading here and there, but rather should be the maximum reductions justifiable by the greater economy achieved.

Since general rate increases are doubtless going to be necessary, reductions in relative charges for maximum loading of cars should be a timely and welcome device for mitigating the effect of the increases on shippers, without corresponding loss to the railroads. If "alternative minima" rates are to do the railroads any considerable good, they should be looked upon as a traffic department instrument to maximize volume rather than, primarily, as an expedient for reducing operating expenses on a given volume of traffic.

What is involved here is an opportunity to induce the shipping community to gear its operations to a large carload, where the economy of railroad movement is most in evidence, rather than to quantities of 10 tons or so, which is an ideal size of traffic unit for truck operations, but not for those of the railroads. It will probably make considerable difference in the future volume of railroad traffic whether the shipping community adapts its operations to a truckload unit or to a carload unit. With the goal in view to establish the carload rather than the truckload as the predominant commercial unit, the railroads could well afford to pass along to shippers, not just a part but all of the savings resulting from heavy as compared to light loading of cars.

"Air-Conditioned" Cabs

With the first snows already reminding those in the less tropical parts of this continent that winter is moving in, enginemen on many conventional steam locomotives are again faced with the impossible task of keeping all sides of their bodies warm at the same time. In what is facetiously referred to as the "air-conditioned" cab, the engine crew's home for most of their time on duty, there is an absence of the comfort for the occupants that can be found in automotive vehicles, the airplane, and more noticeably in its competitors for railroad motive-power supremacy, the electric and Diesel-electric locomotives. The ordinary locomotive cab is comparable to a log cabin with a roaring fire in the fireplace and the doorway covered with a loosely draped curtain to keep out the winter air. To make the comparison more real, move this cabin at train speeds with snow, cinders, and coal dust swirling through cracks between the logs and in the flooring, as well as around the edges of the back curtain.

Steam-locomotive designers have always concentrated their efforts in locomotive improvement upon objectives less intangible than the comfort of the cab occupants. Since the Stourbridge Lion made the first locomotive run in this country, progress in cab design has been limited essentially to the building of a roof over the crew and the installation of reasonably good seats for the engineman, fireman, and the head brakeman. The vestibule cab has made some progress on railroads where locomotives operate in a climate of extremely low temperatures and heavy snows that make it a practical necessity. There are, of course, many other railroads which operate under climatic conditions mild enough to make the vestibule cab considerable of a luxury. No doubt these conditions will include a great majority of the locomotives below the Canadian border, on which the crew must depend for comfort on cab curtains. Even though minimum standards are maintained by the regulations of the Bureau of Locomotive Inspection, it is these curtains which leave so much to be desired in maintaining comfortable cab interiors.

It has been demonstrated that clean and comfortable conditions improve performance in industrial plants. Who can say that discomfort in the cab is not reflected in correspondingly low standards of locomotive performance? Might it not be worth a little serious scheming to adapt the open cab to a type of winter closure better than that now available but requiring a less permanent year-round enclosure than the vestibule cab?

Must Pull Together

To make the improvements in service and efficiency needed to meet the keen competition that lies ahead, nothing within the control of the railways themselves will contribute more substantially than still closer co-operation among officers and employees of operating, mechanical, signal and maintenance-of-way and structures departments. With so many of the functions of these departments dovetailed with those of the others, no department can afford to maintain an attitude of self-sufficiency.

This is not to suggest that a high degree of co-opera-

tion between departments has not obtained in the past. If it had not, the outstanding war-time operating records of the railroads could not have been achieved. In fact, this kind of co-operation has not been limited to individual roads, but has developed between the various departments of different roads. And in most cases it has been studied co-operation—the result of well-thought-out and co-ordinated effort.

A growing number of railway officers believe that there is opportunity for still closer relationship between departments; evidence of this is seen in two of the subjects selected by the Roadmasters' Association for study during the current association year—Minimizing the Need for Slow Orders, and Track Maintenance Problems in C.T.C. Territory. The former of these subjects is not new to the roadmasters, who have given it consideration on several previous occasions during the last 20 years, but it was recognized by them that new conditions, present and pending, demand that it be reconsidered in the light of these new conditions. The latter subject, which contemplates close collaboration with signal department officers, is new to the association, and indicates how many new fields for co-operation are opening constantly.

Possibly in the new subject assignments of the Roadmasters Association there is a timely suggestion for the other railway associations—the Mechanical and Signal sections of the Association of American Railroads, the American Association of Railroad Superintendents, and the American Railway Bridge & Building Association—to give fresh and considered thought to how their members, individually and within their departments as a whole, can work more closely with the other departments, looking to still further improved train service, increased safety, and maximum efficiency in all related railway operations.

Possibly there are equally effective and more immediate means of stimulating renewed interest in this matter of co-operation between departments, including inter-departmental staff meetings on individual roads, and the broadening of employee training courses to include this subject. In certain cases, to break down resistance on the part of individuals, or to give reality to a relationship in which co-operation now exists in name only, specific instructions may be required from the top.

Freight Cars Still at "War"

This is the first peace-time fall shipping season since 1941, and even in that year carloadings were distorted by national defense activities. The situation with respect to freight cars this year has not, however, followed the routine pattern of previous peace-time years, and for a variety of reasons car supply has been practically as tight as it was during the war years.

In the "piping times of peace," the peak of heavy carloading during the autumn was almost invariably passed prior to November 1. This year carloadings are continuing at a heavy rate and all indications are that a high level of loading will be maintained at least until Christmas. There are many factors tending to produce this situation. Among the more important are the harvests of agricultural products which are, almost without exception, at record levels; the return to the

United States of war materiel sent overseas during the years of conflict; the reconversion of various industries from a war basis to their normal pursuits; and a large number of strikes which have tended to extend the heavy fall shipping season beyond its peace-time limits.

Whatever the reasons, the fact remains that the supply of cars is tight and promises to remain so for some weeks to come. This is the situation that must be faced by the railways, the shippers and the receivers who are responsible for the proper loading, unloading and dispatch of freight cars. The return of the five-day week is one of the things that have had a deterrent effect on the adequate supply of freight cars. Other things, such as the loading of cars to their rated minimum weights instead of to capacity, have also had their effect.

One of the big reasons for the intensive utilization of cars during the war was that through patriotic motives all concerned did their utmost to increase the efficiency of handling. While patriotism is not the burning incentive that it was during war-time, those charged with the responsibility for car handling should not forget that patriotism is a peace-time attribute as well, and that any slowing up of the nation's transportation system during the immediate post-war period can have unfortunate effects on the prosperity of the nation. There is no more room or excuse for poor car handling now than there was during the war.

Railways Hit a Home Run

Professional baseball was declared essential to the public morale during the war, and, in accordance with this dictum, the railways attempted to handle professional baseball teams efficiently in their journeys back and forth between the major league cities. Ordinarily, such teams, with their attendant trainers and baseball writers, are handled in special cars. This was frequently impossible under O.D.T. regulations, and the movement of these groups presented quite a problem to the railways, especially after sleeping cars on runs of less than 450 miles were eliminated. Nonetheless, the railways succeeded in handling them so efficiently that instances of failure to meet schedules were extremely rare. The league officers co-operated by so arranging their schedules as to require a minimum of trips.

Recent reports indicated that a majority of the clubs had signed up to travel by air during the 1946 season. But the baseball industry apparently is one with a sense of gratitude. Recently Will Harridge, president of the American League, stated that none of the eight clubs in that league was planning on air travel. Unofficial reports from the National League indicated that the same was true of the clubs in that organization. The airlines have been making intensive solicitation for this profitable business, but there is a feeling among baseball men that deserting the railroads would be little short of treason after the assistance they rendered during the war since, without the railroads' co-operation, the big leagues would have been forced to give up.

President Harridge said: "The American League appreciates very much the services and considerations shown by the railroads, not only during the four wartime seasons, but for the almost half-century of the

league's existence. In fairness to the railroads, the clubs in the American League have assured me they will continue to use the railroads for the transportation of their personnel."

Measuring Light in Dollars

A specific instance of the value of good shop lighting is described in the 1945 report of the Committee on Illumination, Electrical Section, Engineering Division, A. A. R. The report tells of an electric locomotive repair shop in which the light level was raised from a rather spotty 3 to 5 foot-candles to a well distributed 20 foot-candles with astonishing results. A comparison of six months' shop operation preceding the initiation of the new lighting with the six months immediately following showed a 10 per cent increase in the daily output of locomotives, an 80 per cent decrease in the number of locomotives returned to the shop by inspectors because of poor workmanship, a 43 per cent decrease in reportable accidents, and a 41 per cent decrease in non-reportable accidents. There was no increase or decrease of force during this time and during the last two months of the well-lighted period, there were no reportable accidents. The report adds that the morale of the workmen was noticeably improved.

The reader may feel a little skeptical of the accident data, since the frequency of accidents is usually so low that conditions change before conclusive information can be obtained. But as compared with experience on the New York subways, the findings of the A. A. R. report are conservative. Traffic through New York subway stations is so great that safety measures produce usable quantitative figures in relatively short time. Two lighting improvements were made at major stations four years ago and the results since that time have been tabulated. One improvement was in lighting platform edges and the other was in space lighting. After two years, the records showed reductions in accidents, respectively, of 59 and 62 per cent. Now at the end of a four-year period, the reductions are 78 and 79 per cent as compared with accident rates before the improvements were made. Similar records have been obtained for the lighting of highway grade crossings, but since the accidents per year are few, the quantitative figures are less convincing than those obtained on the subways.

The work records shown in the A. A. R. report may also be questioned from the point of view that lighting improvements or changes involve psychological effects. In some cases, in shops, where lighting engineers have deliberately made lighting conditions worse, temporary improvements in production have been noted because the employees thought something was being done for them. Such psychological effects are of short duration, and six months is a sufficient period to note changes in production rates. Few railroad shops have lighting which compares favorably with that common in manufacturing industries. Some of the latter have evidently gone in for quantity rather than quality of light, but most railroad shops can still go a long way before they can be convicted of this error. The results shown in the A. A. R. report may not be an accurate measure of what could be accomplished generally in railroad shops, but the percentage improvements are so great as to justify many other similar applications.

The Last Fifty Years—and the Next

After a lifetime of participation in the development of American motive power, Dr. Ennis foresees a future of increased opportunities in railway transportation

FIIFTY years ago when I was drawn irresistibly into the locomotive industry I faced a great opportunity. Today, as I look toward the future I am bound to say that I think the locomotive industry and the railroad industry offer the young men of America a greater opportunity than they did half a century back. I am delighted to be a young man today.

The future looks exciting and challenging from where I stand because, it seems to me, we may be on the threshold of an era of transportation such as you or I or any of us has not seen before. Total war—the far-reaching bomber—the vast and unbelievable logistical problems solved in order to take millions of men tens of thousands of miles with vast mountains of equipment—all these things have created in our minds a point of view which did not exist before and which has great bearing on the future of our industry.

That point of view has been crystallized in the expression "One World." It is an acceptance of the fact that we are near to every nation in the world—physically near. Distance has a new meaning to us. A hundred years ago the next village was a far trip. It was a journey. Fifty years ago the next county or the next state were journeys and made a man a traveler. Today all of us—but especially the youngsters—think of Moscow, Shanghai, Cairo, London, Paris, as near at hand.

A Travel-Minded World

We cannot afford to underestimate the revolutionary impact of that point of view. Never before have the people of the world—the millions of ordinary everyday people—felt so surely that travel is a normal, natural thing like breathing. Never before have so many people so readily accepted the notion that necessities and luxuries can and should be brought great distances to the modern consumer. Never before have the world and the people of the world so readily accepted the notion that millions of tons of things can be transported easily, in normal course.

It seems clear that we are in a period of a rising standard of living. Men can produce more goods. The war years have seen an increase in the nation's population of 5 per cent—and the next few years will see an even greater addition. In the period that lies ahead, more goods will be consumed per person, and there will be more people to consume them.

By DR. JOSEPH B. ENNIS,

Senior Vice-President, American Locomotive Company

All this means an increase in the volume of transportation. It all adds up to a bright future for the American railroads. Some of the increased peacetime traffic will go to the trucks, and a small amount of high-value cargo will go to the airlines, but the bulk of it will move in freight cars.

Travel, too, should increase with the rising standard of living. The railroads are ready as they have never been in any recent decade to vie for the patronage. The fast streamlined train with reclining chairs, and the "coach-sleeper," which afford the ordinary passenger a chance for a good night's rest with little increase in fare, give the railroads new opportunity to compete with the automobile and the bus.

For years before the war we had listened to taunts that the railroads were overbuilt and that about half the mileage should be scrapped. We had heard these insults so long that even some railroad men were coming to believe them. But between 1941 and 1945 it was pretty clearly shown that we have no excess railroad capacity either for the demands of war or of a fully functioning peacetime economy. The research foundations tell us that in the next ten

years five times as much will be spent in improving roadbed and trackage and building multiple tracks as will be sacrificed by the abandonment of lines.

So if I were an even younger young man than I am, I would be drawn again to the railroad and locomotive industries. For it seems to me that we—all of us here this evening, and the host of young men who have not yet come to us from the scientific schools—have before us the most exciting of all things—a challenge and an opportunity. It is a field of great spirit and high tradition. A U. S. sergeant-engineer running a little steam locomotive on the line from Teheran toward the Russian border came very close to defining the true professional feeling of a railroad man when he said: "Many's the time back home on the B. & O. I've seen millionaires look up at me from their limousines with envy in their eyes."

The accomplishments and the traditions of the locomotive and railroad fields justify a certain confidence and cockiness. Yet if I were going to give some advice—which I am not—it would run something like this:

"We haven't made enough progress. We have done amazing things, yes, but let us look upon them only as a beginning—not nearly so stimulating as what is to come after. Certainly we should not think there are no more worlds to conquer. Very far from it."

Some Forgotten Origins

I want to report a conversation to you—a conversation which until now I have never reported to a soul.

Fifty years ago, slowly rolling out of the erecting shop of the Rogers Locomotive Works, one of Alco's corporate ancestors, came the 376, a high-stepping young lady who was destined to make history on a Mid-Western railroad. She came slowly and humbly; slowly because she was being pulled out by horses and humbly because this was so. Every pound of material that had gone into her making had been hauled by horses nearly a mile from the nearest railroad tracks to the locomotive shop. And now she, like more than 5,000 of her sisters and brothers that had been built in that plant over a period of about sixty years, was to undergo the humiliation of being hauled by horses the same distance to the railroad tracks before she could leap forward under her own power.

Once on the tracks of the railroad that purchased her, she quickly showed her mettle and caused some of the old-timers to realize their age. She did her job



Dr. Joseph B. Ennis

and did it well. She survived one World War, but could not quite see the end of another. Now she has passed on.

After being a main liner for many years, she realized one day not so long ago that the load was getting to be too much for her. The traffic was too heavy; the intensive work-day too long, so she asked to be shifted to a less arduous task on a branch line. In view of her long and satisfactory record, the management granted her wish. Between assignments she found time for meditation.

I happened on her one day when she was in one of these meditative moods and engaged her in a conversation. I told her about the great work that our modern motive power was doing—the long-distance, high-speed passenger runs; the new streamliners; the heavy tonnage freight trains; the great availability of steam, electric and Diesel locomotives; the better utilization; the greater safety and comfort of our passenger trains and, in general, the wonderful records that our railroads were making, and the great contribution to the country's welfare.

She listened to me carefully with an occasional sigh. Then she said:

"Well, I won't be called for an hour and I have time to tell you a few things. First, have you forgotten that many of the early attempts at improvements in the steam locomotive even before my time, after being tried out and discarded, have come back in your latest designs?" And she mentioned feedwater heaters in 1859, roller bearings in 1891, combustion chambers in 1860, brick arches in 1880, siphons and reverse gears about the same time, and in her younger days even turbo-electric locomotives.

"Now," she went on, "you have talked about the improvements you have made and of your high-speed passenger train record runs. It doesn't seem to me that you have got so much to brag about, considering that these records represent the progress of nearly half a century."

She reminded me of a run made in 1876, from New York to San Francisco, on the Pennsylvania Railroad to Chicago; then over the Chicago & North Western to Council Bluffs; from there to Ogden, Utah, on the Union Pacific, and from Ogden to the Oakland Wharf on the old Central Pacific—a total distance of over 3,313 miles. One little eight-wheeler ran the entire 440 miles from Jersey City to Pittsburgh and another one the 879 miles from Ogden to Oakland Wharf. This train arrived in San Francisco in just one minute less than 84 hours from the time it left New York, and this time included all stops, the one at Chicago taking 31 min.

"That was 69 years ago," she reminded me, "when roadbed and equipment were not what they are today. Now let me ask you just how many through transcontinental trains the railroads are running today?"

Then Old 376 referred to some fast running in 1898 on the Philadelphia & Reading, between Camden and Atlantic City, a distance of 55½ miles, which tallied for a start-to-stop time of 50 min.

This address was delivered on December 11, 1945, by Dr. Ennis at a dinner in his honor on the occasion of the fiftieth anniversary of his association with the American Locomotive Company. Other speakers included Dr. Charles J. Hardy, a director of the American Locomotive Company; Paul Kiefer, chief engineer of motive power and rolling stock, New York Central; Dr. Charles Penrose, senior vice-president for North America, the Newcomen Society, and D. W. Fraser, president of the American Locomotive Company. Dr. William C. Dickerman, chairman of the board of the American Locomotive Company, presided.

runs back at the turn of the last century, but we have never had the number of regular scheduled high-speed runs in steam, Diesel and electric that we have had during the past ten years.

During 1942, we had 44 passenger schedules in this country running between points from 50 to 202 miles apart at speeds of 70 to 84 miles an hour. Locomotives, steam, electric and Diesel, have all reached or exceeded speeds of 120 miles an hour. There is no question but that motive power units are available that can maintain any speeds that are considered safe from the standpoint of signals, roadbed and curvature of track.

But speed means power and power costs money. A modern air-conditioned 1,000-ton passenger train traveling on a fairly level road at 70 miles an hour requires about 1,850 hp. at the drawbar. To maintain a speed of 80 miles per hour for the same train on the same track requires an additional 500 hp. At 90 miles an hour a further addition of 550 hp. must be furnished. One hundred miles an hour requires twice the power needed at 70. But speed requirements in freight operations can be met with ease, as far as locomotive power is concerned. In passenger service, the railroads obviously will pitch their battle with the airlines on other grounds than speed.

Years of Opportunity Ahead

I have said that the best decades for the railroads lie ahead, and you may ask me what type of locomotives will pull those heavy trains. To me it seems that the future holds an expanding role for both the steam locomotive and the Diesel. More electric locomotives will be used also, but they will be confined chiefly to areas of congested traffic.

At the moment the trend toward the Diesel is strong. The past year—1944—saw the Diesel for the first time forge ahead of the steam locomotive in orders for road engines. In the switch-engine classification, of course, it has been leading for years. In 1944 the American railroads ordered 426 Diesel switchers—and not one steam switcher.

The Diesel has won its place alongside the steam locomotive the hard way—by sound service on the road and by constant improvement on the drafting boards and in the experimental models. There are Diesel engines in stationary service—and not old ones at that—where weight per horsepower is over 300 lb. and the rotative speed 100 revolutions per minute. Contrast this with the comparable figures for Diesel engines in locomotive units today. We have the weight per horsepower down to 18 lb. and the rotative speed up to 1,000 revolutions. Then remember that we are looking forward to still lighter weight, higher rotative speeds, higher mean effective pressures, and greater output per cubic inch of cylinder volume.

While the Diesel has been stepping out, however, the steam locomotive has not been standing still. I need merely mention the use of stokers, poppet valves,

and which in actual practice was sometimes under-cut by five minutes—an average speed of better than 73 miles an hour! And she spoke of the fastest of all fast runs in 1895 on the Lake Shore & Michigan Southern when a little 17-in. 10-wheeler ran with its train from Erie to Buffalo, 86 miles, in 70 min. 40 sec.

Here Old 376 paused for breath. Then, like any other lady, she was ready to resume her story. But at this moment the hostler climbed up in the cab, and she bade me adieu.

After she had pulled out with her local train, I sat down and pondered what she had told me. I confess I felt somewhat deflated. It is true that most steam locomotives in operation today are built on the basic principles of Stephenson's "Rocket." They are still the reciprocating engine with a firetube boiler.

Changes in Forty Years

But this in itself is no condemnation. The test lies in how much we have increased efficiency in applying Stephenson's principles. Here the record is good.

Consider the progress made in only the last 40 years. At the St. Louis Exposition in 1904 the Pennsylvania built a locomotive testing plant, the most modern of its kind up to that time. Of all the freight locomotives tested the most powerful produced 280 maximum i. hp. per axle.

Today we have steam locomotives that produce 1,500 hp. per axle, an increase of more than 400 per cent. The weight per driving axle of that 1904 model was 43,000 lb. compared to 70,000 lb. for the 1,500-hp.-per-axle locomotive, an increase of only 63 per cent.

The maximum evaporation of any locomotive boiler tested at St. Louis was about twenty tons per hour. Today, we have steam locomotives that evaporate 70 tons of water an hour at 300 lb. pressure and 750 deg. F. temperature.

It is true, as Old 376 stated, that we had a great many special high-speed

unit castings for bed frames of both tenders and locomotives; high-temperature superheating, feed-water heating, the use of roller bearings; the dividing of power into two systems with two cylinders each, and the replacement of the riveted with the welded boiler.

Under the spur of competition, the steam locomotive is reaching new records of availability. During the past few months, one locomotive of the conventional reciprocating type made 26,928 miles in passenger service in one month and followed the next month with the same daily average. Steam still has the advantage of much lower initial cost than the Diesel—and this advantage can be heightened whenever the railroads see their way to accepting the same degree of standardization in the steam locomotive that they have accepted in the Diesel.

Pushing Toward Perfection

Steam engineers are justly proud of the technical refinements and increased efficiency they are building into the reciprocating steam locomotive—but they are far from resting their case there. They are pushing toward the perfection of a coal-burning locomotive propelled by a steam turbine geared directly to the driving wheels or used to power an electric drive.

Experiments with the steam turbine for rail power began nearly forty years ago in Europe, where the high cost of fuel make the low thermal efficiency of the reciprocating engine a greater burden than it is in this country. As long ago as 1908 a company in Scotland built a steam-turbine locomotive with an electric drive, but it got little further than the testing stage. Neither did another Scotch model of the same general type built in 1922. Sweden and Germany tried their hands at direct-drive steam-turbine condensing locomotives and built one model that used 40 per cent less coal than the reciprocating locomotive. But availability was lower and first cost and maintenance were higher; the net advantage still lay with the reciprocating engine.

Just before the outbreak of the war, this country took the initiative with the steam-turbine locomotive. In 1938 a condensing steam-turbine locomotive with an electric drive was completed and tested out in service. Equipped with a high-pressure watertube boiler and generating 5,000 hp., it undoubtedly showed the highest thermal efficiency of any turbo-electric locomotive ever built. But availability was too low to permit its continued operation.

Now other turbo-electric locomotives are on their way. One, designed to burn pulverized coal, is to be equipped with a non-condensing water-tube boiler with a working pressure of approximately 600 lb.

One of the great coal-carrying railroads has placed an order for three coal-burning steam-turbo-electric locomotives with a stoker-fired, non-condensing conventional boiler operating at 310 lb. pressure.

A locomotive with a steam turbine geared directly to the driving wheels was placed in service early in the present year, but test figures are not yet available. This model, like the one I have just mentioned has a conventional type boiler with a working pressure of 310 lb. and is non-condensing. In the various models, enough progress has been made to indicate that the American turbine-driven locomotive in some form or other will be a success.

Recent technological improvements in materials, design and manufacture promise as much. And there is still another good reason for having faith in the continued evolution of the coal-burning locomotive. About 22 per cent of the total freight tonnage of American railroads consist of coal, and the railroads—particularly those operating to and from the coal fields—are anxious to give their best customer a break.

Even newer in principle than the steam-turbine locomotive is one propelled by a gas turbine—simply a geared turbine revolved by hot gases. The coal-burning railroads of this country are exploring the possibility of burning pulverized coal in a gas-turbine locomotive.

The only gas-turbine locomotive in use in the world today, however, burns oil. This locomotive, of 2,200 hp., runs on the Federal Railways of Switzerland. Its thermal efficiency is only about half that of the Diesel, but its builders claim it can operate on crude oil, which would make its fuel cost about the same as that of a Diesel of the same power.

Finally, beyond all these experimental forms of power now being tried out, we stand—terrified, but committed and a little hopeful—on the brink of the atomic age. Just as resourceful and inventive men have found ways to harness steam, electricity and gas, they eventually will find ways to harness atomic energy. And when this happens it will profoundly affect the type of power used in transportation and in all forms of industry.

Meanwhile it is our task to develop to the utmost the sources of power that we have and to use the particular type that is most economic for the job to be done. *This we can do and will.*

Railroads Revitalized

So much for the outlook for railway locomotive power. In conclusion I return to the theme that I voiced at the outset—the war has revitalized the American railroads. Let us compare 1918 with 1943. In 1918, at the peak of World War I, our railways had a total inventory of more than 63,000 locomotives with an aggregate tractive force of more than two billion pounds. And 57 per cent of this inventory was in locomotives ten years old or less. In 1943 we had an inventory of only 42,000 locomotives, having an aggregate tractive force about the same as in 1918 but with only 5½ per cent of the locomotives less than fourteen years old.

With this aged inventory the railroads had a war job to do. How well did they do it with these handicaps? In

this war the railroads of this country handled 97 per cent of all troops; 93 per cent of all Army equipment and supplies; 90 per cent of all Navy equipment and supplies, and in the first forty months of this war troop movements by rail were four times as great as in World War I. The increase in ton-miles was 82 per cent; in passenger miles 124 per cent; the average freight train load increased 67 per cent, and the average miles per car day 99 per cent.

And these records were achieved with 23 per cent fewer employees, 33 per cent fewer locomotives by number, 24 per cent fewer freight cars, 30 per cent fewer passenger cars—and in the 10-year period ended in 1944 there was only one passenger fatality for every 700,000,000 miles of service performed.

Under Government operation in World War I the railroads wound up with a deficit of just under two billion dollars. During World War II, with private operation, the railroads paid into the Federal Treasury four and a quarter billion dollars in taxes—exclusive of the payroll levy—and still earned net profits of almost three billion dollars.

These figures speak for themselves. The railroads did a stupendous job. And the best thing is that the public realizes this fact. A survey made in 1941, and quite recently repeated, indicates that only a little more than half the American people thought the railroads did a good job in *preparation* for the war in 1941. But 89 per cent of the public think the railroads did a good job *during* the war.

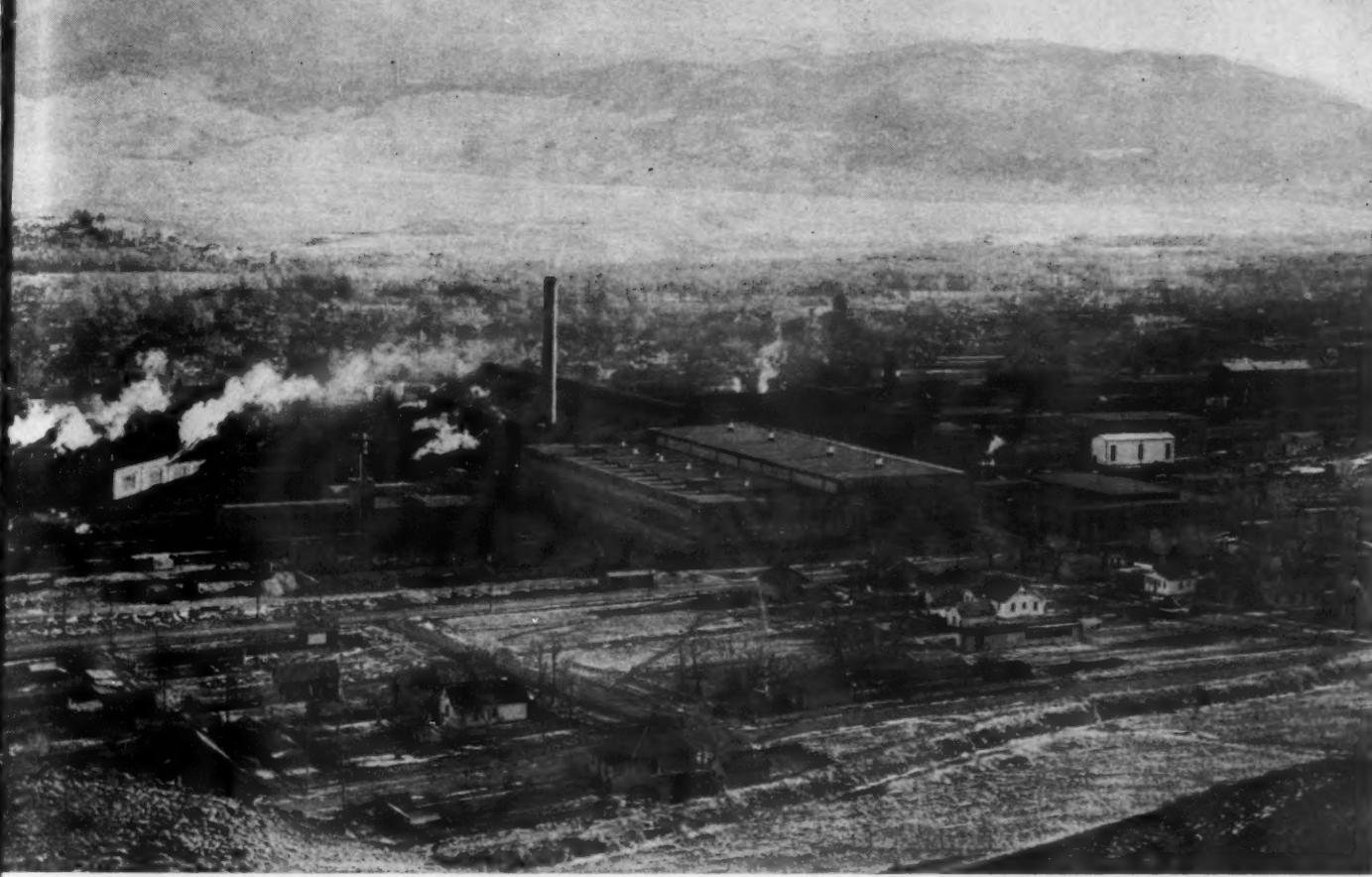
Yet the railroads cannot and will not stand on these accomplishments and this recognition. Airplane and truck competition are back in full force. Both types of competition are ambitious and dynamic. Railroad travel and transportation have their own special values and potentialities, but they must be exploited.

Confident Prediction

For one thing we must appeal to the youth of today, who are the traveling public and the shippers of freight tomorrow. We must increase the number of young people in our own ranks—and give them a chance to do some constructive thinking and make the forward-looking suggestions that come to young minds.

I, for one, have no doubt that the railroads—and their suppliers—will meet the challenge and the opportunity of postwar mass transportation. I confidently predict that in the ten years following the war the American railroads will handle the greatest volume of passenger as well as freight traffic they have hauled in any peacetime decade in history.

It has been my pleasure to work for fifty years in helping build this great transportation machine. As long as I live, I shall watch with absorbing and affectionate interest as the job of building it and rebuilding it, and using it ever more efficiently in the satisfaction of human wants, goes on.



General View Over the Locomotive Shop Area at Livingston, Mont., Before Some of the New Facilities Were Completed, Showing in the Center Foreground the New Steam Locomotive Shop Extension; Immediately to the Right the New Maintenance Equipment Repair Shop; and Immediately to the Left the New Storehouse

Enlarge, Modernize Locomotive Shops

Improvements on Northern Pacific at Livingston, Mont., demanded by purchases of larger steam power during the last 10 years, helped in road's war effort

DURING the last year and a half, with the work now completed, the Northern Pacific has greatly expanded its system locomotive shops at Livingston, Mont., the new facilities at this point including a large extension to its locomotive erecting shop, with 13 tracks capable of holding the largest power on the road; a boiler plate and flue storage building; a storehouse and office building; an acetylene generating building; a journal packing storage building; an enlarged and modernized steam power plant; and a well-laid-out and equipped maintenance-of-way work equipment repair shop. All of these new or enlarged units, which are of modern, permanent-type construction, incorporating many features of special interest, filled a press-

ing need on the road as it threw all of its energy into the war effort.

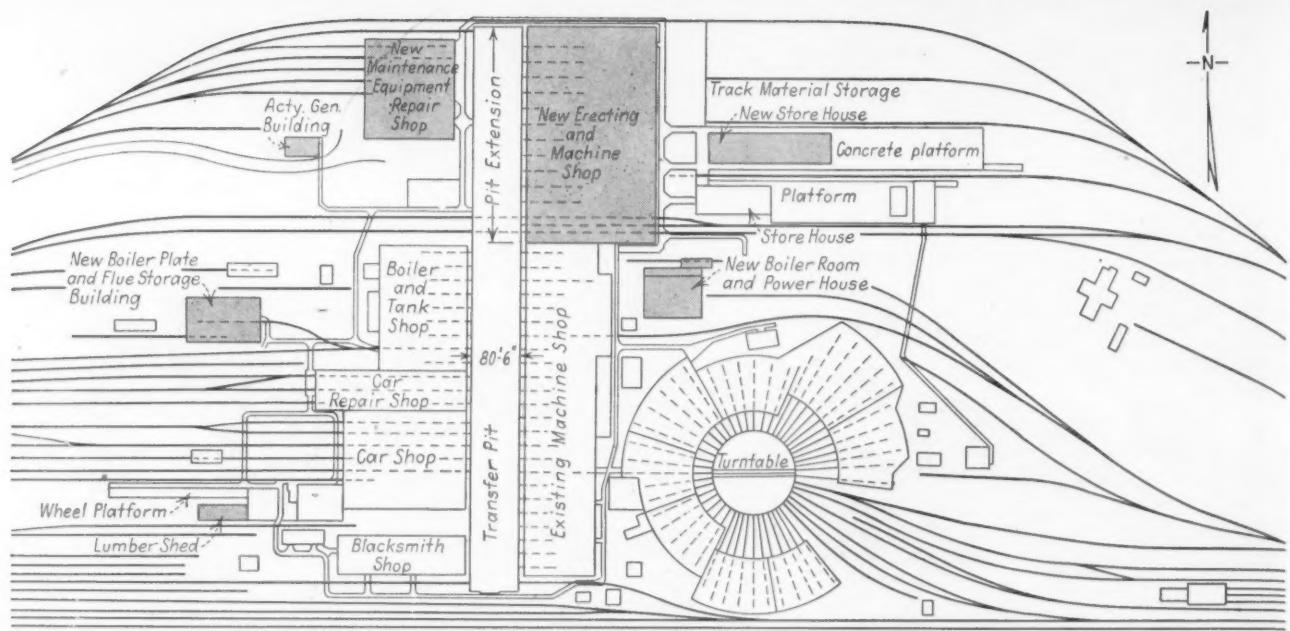
Livingston, for many years one of three main locomotive repair points on the Northern Pacific, is centrally located on the road, being approximately 1,000 miles west of St. Paul, Minn., and 900 miles east of Seattle, Wash. In addition to its locomotive erecting shop, it also has a car shop, a boiler and tank shop, a blacksmith shop, and, as a division point, is the site of a large engine terminal, with a 44-stall enginehouse, which serves locomotives making continuous runs to and from St. Paul and between Livingston and Spokane, Wash.

The earlier locomotive shop at this point, built before the turn of the century, was a typical transverse-type shop of the day, 540 ft. long by 120 ft. deep, with brick exterior walls, a double-

pitched, steel-truss, slate-covered roof and a concrete floor. It was laid out with 24 pit tracks, all of which were served by a flanking transfer table, 65 ft. long, and included a drop table capable of handling a single pair of drivers. Beyond the ends of the shop tracks, which were 60 ft. long, was a continuous machine bay, 60 ft. wide, for work on locomotive parts, and on the opposite side of the transfer table pit were located the boiler and tank shop, the blacksmith shop and the car repair shop. All of these latter facilities remain in the enlarged layout.

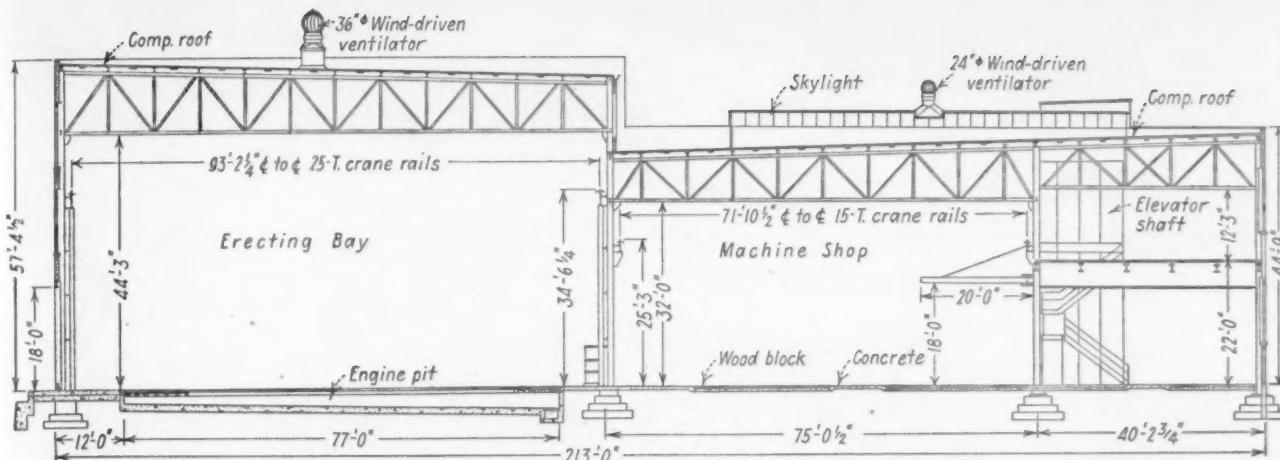
The need for the enlarged shop at Livingston was essentially war born, although prior to the war the road began the purchase of simple articulated locomotives, which could not be housed and repaired with any degree of efficiency in

NOTE—All photographs in this article courtesy The Austin Company, Cleveland, Ohio.



Above—General Layout Plan of the Northern Pacific's Locomotive Shops at Livingston, Mont., Showing by Shaded Areas the New or Enlarged Building Units. Below—Looking Generally South Through the Locomotive Shop Extension, Showing Old Transverse Shop, with Its Short Pits, in the Right Background





the existing locomotive shop—which also had a bearing on the decision to enlarge the shop. Since 1934 these locomotive purchases have included thirty-six 4-8-4-type passenger locomotives, 10 of which were purchased in 1935, 8 in 1938, 8 in 1941 and 10 in 1943, and forty-six 4-6-6-4 type freight locomotives, 21 of which were purchased in 1936, 6 in 1942 and 20 in 1943 and 1944. This growth in large power ownership made the shop enlargement program essential, especially under the heavy traffic demands on this power in recent years, and the new work began in 1943.

Shop Tracks 88 Ft. Long

The new locomotive shop is essentially a north-end extension of the existing shop, which lies in a generally north and south direction. On its west face, the new shop lines up with the old shop and is served by an extension of the existing transfer table pit. Incidentally, to handle the larger power, the transfer table itself was extended 15 ft. 6 in. on its east end to a length of 80 ft. 6 in., which was made possible by cutting back a 20-ft. wide uncovered platform which lay along this side of the old shop, and which was serving no useful purpose.

The shop extension is rectangular in plan, 352 ft. long and 213 ft. deep (about 100 ft. deeper than the old shop), and was made to open directly into the old shop at its south end by the removal of the north-end wall of the old unit. The building is of modern fireproof construction, with concrete foundations, a structural steel frame and roof, brick exterior walls with large continuous panels of glass blocks for generous daylighting, and an insulated wood roof deck, equipped with a series of 11 transverse skylights.

The new unit is divided by open lines of columns into three main parallel and connecting bays—an erecting bay, 97 ft. 9 in. deep, with a clear height to roof trusses of 43 ft. 3 in.; a machine shop bay, 75 ft. wide, with a clear height to roof trusses of 32 ft.; and an auxiliary machine bay, 40 ft. wide, with a clear height of approximately 20 ft. to the underside of a continuous overhead balcony of the same width. The balcony area, also used for auxiliary shop pur-

General Cross Section Through the New Locomotive Shop Extension, Showing Details of Construction

poses, has a clear working height below roof trusses of 12 ft. 3 in., and is reached by two 12,000-lb. capacity, automatic electric elevators, with 8-ft. by 10-ft. platforms, and by two flights of steel stairways, in each case located adjacent to one of the elevators.

The erecting bay has 13 tracks spaced 25 ft. center to center, 11 of which are 88 ft. long and equipped with concrete engine pits 77 ft. long. The other two tracks, also equipped with engine pits, are through tracks, and, as such, are equipped with forced-draft ventilators for firing-up purposes, with adjustable hoods which can be set down directly over locomotive stacks.

The floor in this bay is of concrete, 6 in. thick, except for jacking platforms 3 1/2 ft. wide along both sides of each pit, which consist of closely-spaced 6 1/2-in. by 6 1/2-in. timbers laid on heavy concrete foundations integral with the pit walls. The locomotive entrance doors are all of the four-section side-hinged type, of frame construction, with large areas of sectional glass forming the upper panels—a long-time standard type of engine-house door on the road. These doors afford clear openings of 14 ft. 8 in.

The floors in both the main machine shop and the first-floor level auxiliary shop are of 2 1/2-in. wood blocks on a concrete subfloor, except for three concrete trucking aisles, 8 or 10 ft. wide, in each case finished on top with a metallic hardener. In the balcony shop area, the floor construction consists of 3/4-in. maple flooring on a 2-in. by 4-in. laminated wood deck.

Improvements made in machine equipment to take care of the enlarged shop consisted essentially of the installation of new machine tools, as shown in the accompanying table.

Other Construction Features

Describing the general construction features of the shop in greater detail, the brick exterior walls are faced with Helena hard-faced red brick; the glass

block areas of the exterior walls, which are made up of 8-in. by 8-in. blocks, extend in multiple continuous bands around all four faces of the building, occupying approximately 50 per cent of the total wall area; and the roof deck throughout is of 2-in. tongue-and-groove wood sheeting, covered with 1/2-in. rigid-type insulation, protected, in turn, by a 5-ply built-up tar and gravel roof covering.

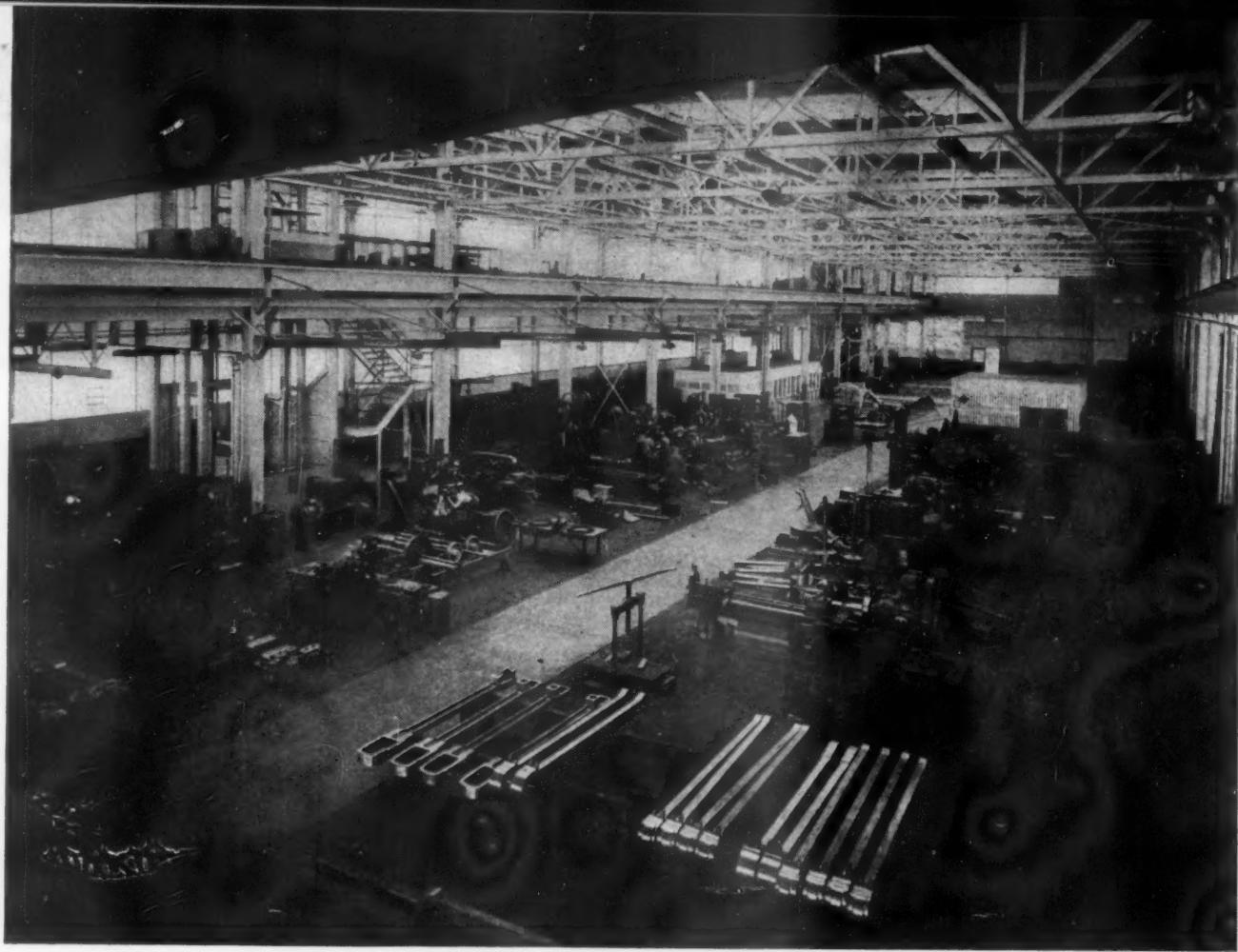
The skylights, all of which are located transversely over the machine shop areas, are of the monitor-type, for the most part 69 ft. long, and all of them are fitted with corrugated, blue-tinged, light-diffusing, non-glare wire glass.

For ventilation, supplementing numerous ventilating sections in the glass block areas of the side and end walls, the roof over the erecting bay is fitted with four equally-spaced, 36-in. wind-driven ventilators, and the roof over the machine shop areas is equipped with six equally-spaced, 24 in. wind-driven ventilators—the latter being incorporated in the tops of alternate skylights.

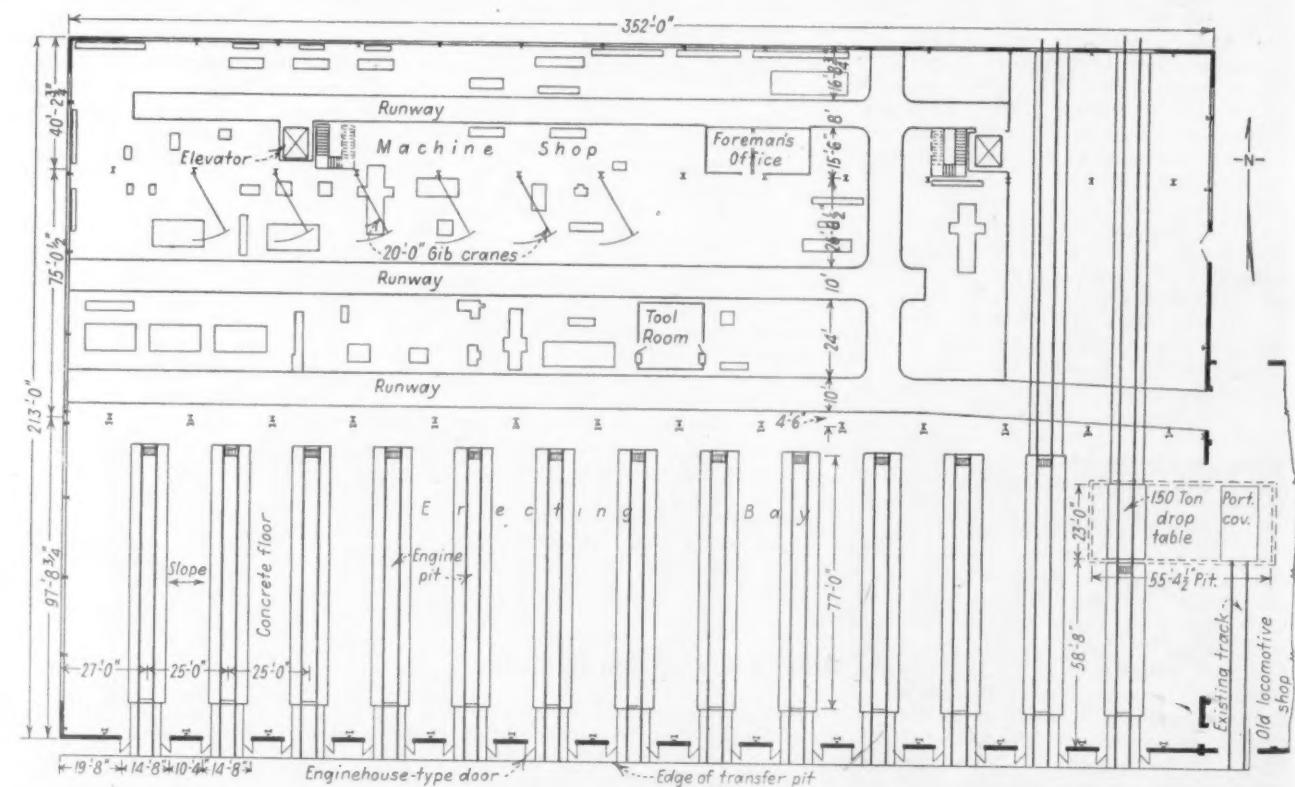
A special area along the east side of the main machine bay, completely housed in, is given over to a general foreman's office, a machine shop foreman's office, and a first-aid room. This area, which is 32 ft. long by 14 ft. 4 in. wide, is enclosed and partitioned by wood wall panels with large upper sections of glass to afford full view of shop operations, and has a continuous roof, or ceiling, finished on the under side with acoustical material. Each room of this enclosure is

New Machine Tools Installed at the Livingston Shops

- 8 Engine lathes
- 8 Portable arc welders
- 3 Horizontal turret lathes
- 2 High-power plain milling machines
- 1 Locomotive spotter
- 2 Drill presses
- 3 Emery grinders with two wheels
- 1 Universal tool grinder
- 2 Westinghouse air brake test racks
- 1 High-speed piston-turning and grinding machine
- 1 112-in. heavy-duty tire mill
- 1 Bullard vertical turret lathe
- 1 Shaper
- 1 Vertical turret lathe
- 1 Horizontal boring, drilling and milling machine
- 1 Pipe-threading machine
- 1 Flue-roller welding machine
- 1 6000-lb. steam hammer
- 1 Forging furnace for the blacksmith shop
- 1 6000-lb. jib crane for blacksmith shop
- 1 Universal grinder 12-in. by 36-in.
- 1 Internal grinder
- 1 Traveling cranes, one 25-ton and one 15-ton
- 1 150-ton Whiting drop table



Above—View South Through the Main Machine Shop Bay of the Locomotive Shop Extension, Showing General Features of Construction. Below—General Floor Plan of the New Locomotive Shop Extension, with Its Long Pit Tracks and Spacious Machine Shop Areas



decorated as an office area, has electric lights, fin-type wall radiators, a separate ceiling ventilator, and a wash basin with hot and cold running water.

Another special area within the shop, centrally located along the west side of the main machine bay, is a tool crib, 19 ft. 9 in. square and 10 ft. high. This area is slat-enclosed, is fitted with an orderly arrangement of shelves, drawers and bins, and is served by two 3-ft. by 6-ft. 8-in. doors, on the north and south ends, for the convenience of those seeking or returning tools.

The entire interior of the new shop is painted with aluminum paint above a dark green dado, 5 ft. high, a color scheme which was likewise carried continuously throughout the old locomotive shop in an attempt to improve lighting and general working conditions in that shop.

Cranes and Drop Pit

The erecting bay is served throughout its length by a 25-ton traveling overhead crane with a 15-ton auxiliary hook, which spans the full width of the bay, operating on crane rails 34 ft. 6 in. above the floor level. These rails are supported on steel columns adjacent to but independent of the building columns. In the main machine bay, lifting is done by a 15-ton overhead traveling crane with a 5-ton auxiliary hook—supplemented by a number of column-mounted jib cranes at various locations for specific operations. Jib cranes are also provided, as required, in the auxiliary machine shop areas. The old erecting shop, on the other hand, continues to be served by a 40-ton traveling overhead crane, and by a series of jib cranes in the old machine shop section, which, incidentally, has given up all of its old belting and line shafting for direct motor-driven machine tools.

All wheeling and unwheeling of locomotives at the shop is done on a new 150-ton sectional, electrically-operated Whiting drop table, 23 ft. long, located on the most southerly track of the new shop extension, immediately adjacent to the old shop. This table is large enough to drop three or four pairs of drivers at a time, or it can be used to drop a single pair of drivers if desired. Drivers dropped on the table are moved laterally through a connecting pit and are brought up on the adjacent most northerly track in the old shop section.

In the operation at the shop, locomotives, after being unwheelled over the drop pit, are brought out on dollies to the transfer table and thence are moved into any free pit tracks of the new erecting shop. Here they are stripped, following which the various parts are sent to cleaning points and then to the various machine shop areas for repair or overhauling.

In the new set-up, no locomotives are handled on any of the 24 tracks of the old shop, this area having been re-assigned largely to work on superheater tubes, driving wheels, stokers, etc., and for storage, with a stall or two being assigned at times for the overhauling of

the steam shovels, cranes and ditchers of the maintenance of way department.

Special Service Facilities

Special service facilities within the new shop include air and electric power outlets at both ends of all engine pits; water and steam outlets at the front end of each pit for use independently or jointly for boiler washing and refilling operations; and a shop-wide system of compressed air, oxygen, acetylene and electric welding outlets at the different column lines to permit the greatest flexibility in repair operations with minimum movement of locomotives or locomotive parts to special repair points. All piping about the shop is painted with aluminum paint, except that carrying oxygen, which is painted yellow, and that carrying acetylene, which is painted red.

Toilet and locker room facilities at the shop are located in an existing area at the northeast end of the old locomotive shop, where they are immediately adjacent to the south end of the new shop extension. These facilities, completely modernized, include a toilet room 22 ft. by 24 ft., fitted with 16 water closets, 5 urinals and 5 lavatories, located immediately adjacent to a locker room, 44 ft. long by 24 ft. wide, which is equipped with steel lockers and with two 54-in. Bradley wash fountains. Lunch room facilities for the men are located on a mezzanine floor directly above the toilet and locker rooms, and are reached readily by means of nearby stairs.

Fluorescent Lighting

Artificial illumination throughout the shop extension for night operations, or for supplementing daylighting on dark days, is almost entirely by fluorescent light supplied by parallel lines of multiple-tube fixtures hung on steel messenger cables at the lower chord level of the roof trusses in the different areas. In the erecting bay, where 15 foot-candles intensity was sought at the floor level (unaided by daylighting), illumination is by means of six rows of 28 equally-spaced fluorescent lighting fixtures, each fixture containing two 100-watt tubes. In each of the engine pits in this area, supplemental lighting is by means of twelve 200-watt incandescent lamp fixtures recessed in the sidewalls, six on each side, staggered with those on the opposite side, and designed to project their rays upward toward the undersides of locomotives.

In the main machine shop bay, artificial illumination is by means of six rows of 41 equally-spaced fluorescent fixtures, each fixture including two 100-watt tubes; the system as a whole being designed to provide 25 foot-candles at the floor level. In the auxiliary machine shop area beneath the balcony, where 25 foot-candles were also sought, illumination is by means of four rows of fixtures, each with twin 100-watt tubes. On the balcony area, three rows of 28

fixtures, each with three 40-watt tubes, give a lighting intensity of 15 foot-candles. Purchased during the war, all of the fluorescent fixtures have non-metallic reflectors.

Special features of the lighting systems are the uniformity of illumination, with the minimum of shadows, and a sectionalized wiring and control arrangement permitting localized lighting in the interest of economy. It is also worth noting that, while considerably more expensive in first cost, the fluorescent systems installed produce the illumination desired at a power consumption cost only about one-half that which would be incurred if ordinary incandescent lighting had been installed.

Heating of the new shop is by means of a series of 10 large-capacity, roof-hung revolving-type unit heaters, which direct the warmed air downward and uniformly over the floor area. When installing this modern heating in the new shop, nine similar heaters of smaller capacity were installed in the old locomotive shop, replacing a system of direct radiation from wall and pit pipe coils. All steam for heating is furnished by the shop power plant, which has been enlarged and modernized.

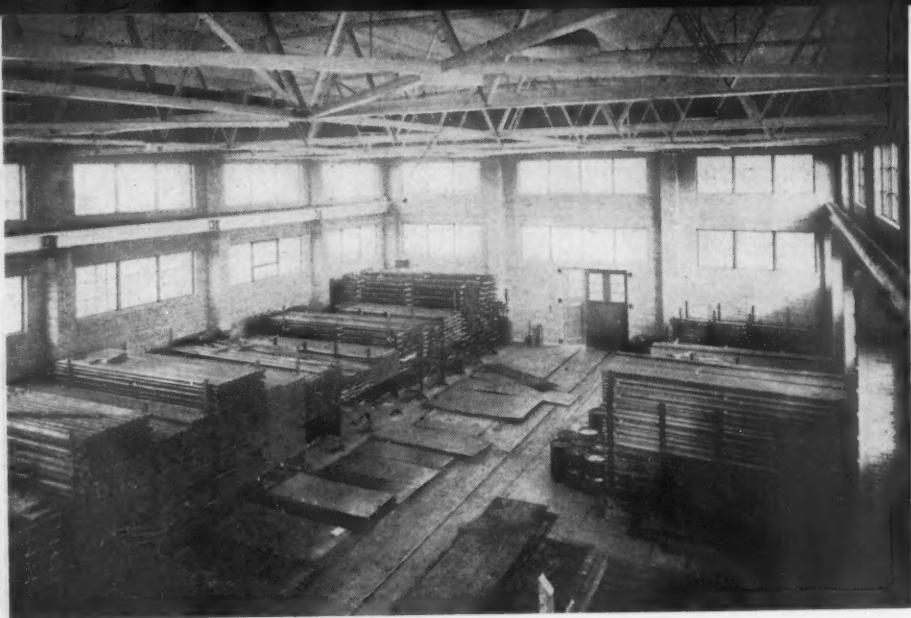
New Plate and Flue Storage

Other improvements at the Livingston shops, as mentioned at the outset of this article, include a new boiler plate and flue storage building, a new stores building, a new acetylene generating building, a new maintenance-of-way work equipment repair shop, and a rebuilt and enlarged steam power plant. A detailed description of the maintenance-of-way work equipment repair shop, one of the most modern of its kind of the country, will be presented in a subsequent issue.

The new boiler plate and flue storage building, located across the transfer table and about 200 ft. west of the boiler and tank shop, is a one-story building, 122 ft. by 72 ft. in plan, with common red brick exterior walls, which rise to a height of 36 ft. to a flat wood roof deck supported on steel trusses and protected with built-up composition roofing. Throughout, the floor is of reinforced concrete, and, for daylighting, each of the end and side walls is fitted with two almost continuous bands of sectional glass windows, three panels high, the tops of the upper panels being at the lower chord level of the roof trusses, 28 ft. above the floor.

For the orderly storage of flues and plates the building is equipped with a series of steel racks, and for the efficient and safe handling of these materials both into and out of storage, it is served by about 70 ft. of standard-gage track entering from one end, by a second standard-gage push-car track, which extends through the center of the floor area from the opposite end, and by a 10-ton overhead traveling crane, which serves the entire floor area.

The new stores building, a two-story and basement structure, 200 ft. by 50 ft. in plan, is located immediately behind



Within the New Boiler Plate and Flue Storage Building



Looking Down on the New Stores Building. A Section of the Old Storehouse Is Shown at the Right



the new locomotive shop extension, where it supplements a former two-story stores building of about the same size, but which had to be shortened to a length of 121 ft. to make room at its west end for the construction of the shop extension.

While the old storehouse is of frame construction, the new unit, directly alongside, is of brick and concrete, with concrete floors and a wood roof deck covered with composition roofing. Modern in every respect, the basement of the new storehouse provides for the storage of heavy materials. The first floor provides for approximately 2,800 sq. ft. of office space for the storekeeper and his clerks and for the shop superintendent and his clerical staff; an area approximately 48 ft. by 44 ft. for the unpacking and packing of materials; and an area approximately 48 ft. by 83 ft. for the rack storage of materials.

Directly above the office area on the first floor, and connected by stairs, are other office areas for the district engineer's forces, the road foreman of engines, a shop drafting room, and the water chemists' laboratory, which occupy the first 59 ft. of the building. Behind these areas, the second floor is given over entirely to materials and parts storage in an orderly arrangement of racks and bins each side of a wide center aisle. All three floors of the new storehouse are served by an automatic electric freight elevator, while outside, each side of the building is served by a 10-ft. wide concrete car-floor-height platform and a service track, the flanking platforms merging at the rear of the house into a continuous storage platform 70 ft. wide by 250 ft. long.

Rebuild, Enlarge Power House

The old power house at Livingston, furnishing steam and compressed air for all shop operations, was practically rebuilt in connection with the shop extension program, both to enlarge its capacity and to replace old inefficient equipment. No change was made in the size of the engine room, but the boiler room was nearly doubled in size, was enclosed with brick walls with large panels of glass blocks, and was fitted with two modern boilers and the latest in modern coal and ash-handling equipment.

The new boiler room houses a 314-hp. water-tube Bandenhausen boiler with chain grates, a 200-hp., 4-drum, water-tube Stirling boiler with underfeed stoker, and two new 700-hp., 4-drum, water-wall-type Stirling boilers with spreader-type stokers—the latter two replacing four old 4-drum Stirling boilers, each of 200-hp. capacity, and equipped with underfeed stokers.

Special features of the enlarged boiler house layout are new automatic coal and

(Continued on page 989)

Looking Through the Packing Section and Rack Room on the First Floor of the New Storehouse

Crowley and Scandrett Head Milwaukee

FOLLOWING completion of the reorganization of the Chicago, Milwaukee, St. Paul & Pacific, Leo T. Crowley has been elected chairman of the board of directors, and H. A. Scandrett elected president of that road. Mr. Crowley will retain his present position of chairman of the board of the Standard Gas & Electric Co., Chicago.

Crowley Record Impressive

Mr. Crowley takes his new position with an impressive record as a business man and executive. Born at Milton Junction, Wis., and a graduate of Wisconsin University, he began his business career with the General Paper & Supply Co., later launching out into the banking business when he was elected president of the Bank of Wisconsin at Madison, Wis. With this thorough grounding of business and finance he was pressed into government service in 1934 when he was appointed president, and later chairman, of the Federal Deposit Insurance Corporation. In 1942 Mr. Crowley was appointed alien property custodian, and one year later he became head of the Office of Economic Warfare. Before resigning from government service on October 15, he also found time to serve in a number of other critical capacities, including foreign economic administrator and a member of the War Production Board and the joint war production committee.

In 1939 Mr. Crowley was elected chairman of the board of the Standard Gas & Electric Co., a utility holding company with headquarters at Chicago. He has also been chairman of the Export-Import Bank, Petroleum Reserves Corporation, Rubber Development Corporation, and the United States Commercial Company.

In accepting the presidency of the Milwaukee, Mr. Scandrett is serving in that capacity for the second time, having been elected president of that road on January 11, 1928. Since January 1, 1936, he has been federal court trustee in executive charge of the property.

Mr. Scandrett was born at Faribault, Minn., on April 8, 1876, and received his higher education at the Shattuck Military Academy, Faribault, and the University of Minnesota, graduating from the latter in 1898 and completing his legal education there in 1900. He entered railway service in 1901 as a claim adjuster of the Union Pacific and a short time later he was transferred to the legal department, where he was appointed assistant attorney for the Kansas and Missouri at Topeka, Kan. In 1911 he was appointed assistant interstate commerce attorney for the Union Pacific

and the Southern Pacific, later being promoted to interstate commerce attorney for both roads. In 1913 Mr. Scandrett was advanced to interstate commerce attorney of the U. P. system, and during World War I he served as traffic assistant of the Central Western region for the United States Railroad Administration.

He was vice-president of the Union Pacific when, in 1928, he resigned to accept the presidency of the Milwaukee, and found himself taking charge of a road which had just terminated its receivership and bore the record of being the largest railway system ever to be in receivership in the history of the United States. Thus Mr. Scandrett went to the Milwaukee after 26 years spent in directing a variety of phases of the Union Pacific business requiring legal talent. Later he devoted considerable time to wage proceedings before arbitration boards and mediation officials as counsel for the Conference Committee of Managers of the Western railways.

Receivership Began in 1935

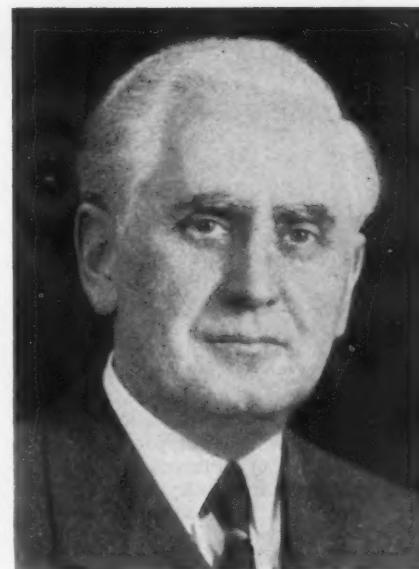
Mr. Scandrett took over as president in 1928 after the road had been reorganized following a receivership that had lasted since March 18, 1925. Under this reorganization, a reduction of about 35 per cent in fixed charges was made, from \$21,800,000 of annual fixed interest charges on funded debt to about \$14,000,000.

The world-wide depression forced the Milwaukee back into receivership in December, 1935. In 1934 the total operating revenues were \$87,859,792 and the net operating income was \$6,539,054. In 1935 the total operating revenues were \$92,473,793, and the net operating income was \$4,723,983. For the next four years, the Milwaukee's financial results paralleled the existing general business conditions as follows:

Year	Net Operating Income	Total Operating Revenues
1936	\$9,461,358	\$109,142,086
1937	8,790,661	107,662,276
1938	5,274,539	99,436,846
1939	8,124,194	106,875,380

In 1940, however, under the impetus of the beginning of the national defense activities, the showing was distinctly better and a vast improvement was shown in 1941. The net operating income for these years was \$13,845,644 and \$28,181,975, respectively, and the total operating income was \$114,375,589 and \$139,646,122.

In common with other roads serving the Pacific Coast, the Milwaukee shared in the increased traffic volume brought about by the war and the cessation of



Leo T. Crowley



H. A. Scandrett

coast-to-coast shipping via the Panama Canal. Total operating revenues increased rapidly during the war years, from \$179,867,280 in 1942, to \$224,515,240 in 1943 and \$226,709,693 in 1944; while the net operating income was \$34,504,654 and \$50,668,954 and \$32,709,519, respectively.

Reorganization plans for the road began to take shape early. The first plan was approved by the U. S. District Court in 1940, but it was appealed to the U. S. Supreme Court. That body approved the plan in principle, but asked the Interstate Commerce Commission to make certain corrections in March, 1943. The revised plan was approved by the U. S. district court in Chicago on June 30, 1944, and Judge Igoe of that court ordered the turning over of all properties to the new corporation on December 1, 1945.

R. R. Credit Requires Fair Deal to Stock

Convertible bonds suggested as device to scale down debt, and Congress is urged to enact principles of Hobbs Bill as a matter of justice as well as expediency

BANKRUPTCY comes when there is too large a percentage of bonds to stock. The I. C. C. Bureau of Statistics has made a study showing the correlation between a high ratio of debt and occurrence of bankruptcy. Several cures in reorganization have been adopted in the past. One has been to issue income bonds, with a contingent, not mandatory, interest charge, payable only if earned. In other cases bonds of the old company have been exchanged for stock of the new company; bonds decreased and stock increased. Another device has been heavy sinking funds to retire part of the bond issues; bonds decreased and the surplus account increased. This method has serious disadvantages, because, under it, it becomes difficult if not impossible to pay dividends on stock, thereby making stocks less attractive to investors and deterring stock financing of necessary expansion and improvement.

The Convertible Bond

I should like to suggest a new method—the use of an old device, the convertible bond. The I. C. C. might decide in reorganizations that all bonded indebtedness in excess of, say, 33 to 40 per cent of the total capitalization should be refunded into convertible bonds. The conversion prices should be staggered on a scale up, so as not to be self-defeating. When the stock rises, the bonds would be converted into stock and would disappear. Their fixed charges would cease. Such bonds, with this speculative option, could be easily sold. The stock would not be subject to strangling amortization charges and, therefore, could pay good dividends; should be attractive to the investor; and should be a medium for financing expansion and improvements.

Let us look at five major roads that have been in receivership from 1930 to 1944. The Chicago & North Western has just been reorganized. The preferred stock and common stock were wiped out, although for years the common stock was a prime investment and the preferred stock was almost of trustee quality. The common stock sold above \$100 for many years through 1916. From 1926 to 1928 the stock sold in the 90's and in 1929 above \$100.

This article is an adaptation of testimony presented recently by Mr. Friedman at Senate committee hearings on S. 1253, a bill introduced by Senator Wheeler at the request of the I. C. C. to provide for voluntary reorganizations of the type called for in McLaughlin Act, which recently expired (see *Railway Age*, November 3, page 729).

By **ELISHA M. FRIEDMAN**
Consulting Economist

Frisco sold as high as 102 and 135 in the years from 1925 to 1930. St. Louis-Southwestern sold as high as 115 and 124 in 1928 and 1929. Rock Island sold as high as 116 to 125 between 1927 and 1930. New Haven sold as high as 129 to 132 in 1929 and 1930.

If, during this period, convertible bonds had been outstanding, the debt could have been drastically curtailed in the normal course in prosperous years. Subsequent bankruptcy could have been avoided. Stockholders would not have been expropriated and the roads would even have been in a position to do additional bond financing.

The "border-line" roads would never have fallen into the danger of bankruptcy under such a procedure. For example, the stock of the Baltimore & Ohio sold from 1926 to 1930 as high as \$109 and \$145. The New York Central sold from 1922 to 1931 between \$101 and \$256. Bankruptcy would never have threatened if junior bonds had been convertible. I recommend, therefore, that pending railroad reorganization legislation be amended to provide that all bonds above 33 per cent to 40 per cent capitalization, subject to the discretion of the I. C. C., be required to be convertible into common stock, and be not callable to avoid conversion. This conversion privilege need not be at 100. For example, the Great Northern recently had a bond issue convertible at \$40 per share. Thus a \$1000 bond would receive 25 shares of common stock. Since most of the railroads are capitalized at less than asset value or the 19a valuation of the I. C. C., the conversion price might be less than par.

Equities Wiped Out

Pending legislation should be further amended to prevent the wiping out of common stock. This provision is doubly important in view of the recent experiences of railroad stockholders. When the 1935 amendments to Section 77 of the Bankruptcy Act were considered, the I. C. C. stated that they would not wipe out common stock. Unfortunately, however, by strained interpretation of the law, the I. C. C. did wipe out stock. The courts have refused to review the findings of the I. C. C. Justice Reed, writing the opinion of the Supreme Court in the St. Paul case, stated, "The power of the court does not extend to

participation in all responsibilities of the Commission. Valuation is a function limited to the Commission, without the necessity of approval by the court."

Though the intent was merely to postpone the maturity or reduce the interest, the I. C. C. took upon itself drastically to change the structure of the capitalization. Broad powers have been misinterpreted, according to the report of the House Judiciary Committee. The I. C. C. was authorized to reduce debt but not capitalization. Therefore, in the voluntary reorganization bill, S. 1253, introduced by Senator Wheeler at the request of the I. C. C., the powers of the I. C. C. should be defined and limited. Administrative bureaus are too far removed from the people. The members are appointed for long terms, not elected for brief ones. Therefore, they are not responsive to public opinion which is the basis of democratic government. Such bureaus, not sensitive to the wishes of the electorate, should have their powers defined by those who are thus sensitive.

Certainly, appointed officials should not determine policy for the elected representatives. If Congressional committees were adequately staffed with their own experts, this threat to democratic procedure would disappear. Until such Congressional reform is enacted, Congressional committees should be constantly aware of this danger.

Hobbs Bill Popular

A striking example of this situation has come to notice recently. The Hobbs Bill on railroad reorganization was recommended unanimously for passage by the House Judiciary Committee in June, 1944. The I. C. C. wished to pigeonhole the bill in the Rules Committee, but an outpouring of letters from the voters forced the bill out of that committee. It passed the House unanimously, excepting one lone vote. The I. C. C. has again tried to lock this bill up in a subcommittee of the Senate Committees on Interstate Commerce and Judiciary. The I. C. C. still remains adamant in its opposition, although practically every senator to whom I have spoken says that his constituents are pleading that this bill be brought to the floor for debate. I believe that the powers of interpretation of the I. C. C. should be strictly defined so that stockholders cannot be wiped out without their consent and without their having an opportunity to retain ownership such as was provided in the old bankruptcy procedure.

The old procedure in railroad bankruptcy deserves re-examination. It was

abused by reorganization managers, who obtained huge fees in the process, but, as far as the stockholder, particularly the small one, was concerned, the old procedure had one great merit, viz., that the stockholder was given the option of paying an assessment and retaining ownership. Today he has no option. He is treated as ruthlessly by his own government as the Wall street pirates used to treat stockholders in the mid-nineteenth century. To punish the bankers, the stockholders were vicariously afflicted. The reorganized railroads were taken from them and were transferred to such powerful financial institutions as insurance companies. Banking and legal fees could be rigidly controlled without thus expropriating stockholders.

Old Procedure Better

Under the old method, each group of security-holders formed a committee. By negotiation and agreement a new capitalization was devised. An assessment was levied on the stockholders. The plan was underwritten; that is, a syndicate was willing to pay the cash, if the stockholder was not. The reorganizations were scattered in law offices throughout the country. The time could be, and often was, brief. Under the new method, the plan arises, not by agreement among interested parties, but by government fiat from without. New money is put up, not by the stockholders who retain ownership, but by the R. F. C., which uses the stockholder's tax money and then expropriates him. The plan is not underwritten; therefore there is no test of its workability or soundness. It is dictated by an irresponsible bureau which bears no financial responsibility and has no blame if the plan is wrong. All reorganization plans are concentrated in one bureau with a necessarily limited personnel. Delays are, therefore, inevitable.

Though the I. C. C.'s voluntary reorganization bill, S. 1253, does not concern stockholders, it would be well to review the unhappy results of the present reorganization procedure in the light of former procedure.

The most glaring defect of the I. C. C.'s proposed new legislation is that it provides for future remedies but ignores the railroads now in trouble. It applies only to a "carrier other than a carrier in equity receivership or in process of reorganization under Section 77 of the Bankruptcy Act." Of this feature, let us consider the implications. The I. C. C.'s proposal is designed to deal with future bankruptcies. If it is a sound measure, why should it not apply also to present bankruptcies? Suppose when Dr. Banton discovered insulin he had said: "This drug must be used only for future diabetics and not for present diabetics." Before we deal with the future let us deal with the present. *

Since the I. C. C. reorganization plans have been completed, beginning in 1938, the financial condition of the railroads has improved sensationaly. From 1939 to 1944 gross income of all Class I roads rose from \$4.0 to \$9.4 billion. Net income after taxes rose from \$95 million

to \$668 million; net income before taxes rose from \$451 to \$2,514 million. Net current assets or working capital rose \$2.9 billion from a deficit of \$1.2 billion to a plus of \$1.7 billion. Total debt declined from \$9.7 billion to \$8.0 billion. Interest charges declined from \$400 to \$320 million.

Yet the I. C. C. is executing a policy toward reorganizations based on the assumption of a permanent depression at the 1931-35 level.

The I. C. C. based its reorganization plans and new capitalization on the earnings of the depression years, 1931-35, even though Commissioner Eastman stated at hearings of Congress that these depression years would not be used as a basis of reorganization. The I. C. C. itself in December, 1944, forecast "post-war traffic" for 1947 to 1949, not at depression levels of 1931 to 1935, but exceeding the high levels of 1929 and 1941.

Earnings on railroads in reorganization have been large since 1941. A striking example follows:

St. Louis-South Western earnings per share of common stock:					
'41	'42	'43	'44	'45	
\$20	28	38	41	38	(est.)

Back interest has been paid off in full on the two senior issues and almost in full on the third issue. The present plan of reorganization is antiquated because the default is almost completely cured. In 1944 the road's excess profits tax alone was \$22,000,000, or about 130 per cent of the \$17,000,000 common stock, now declared worthless. The date of the original petition for receivership was December 12, 1933, and the date of the first plan announced by the I. C. C. was June 30, 1941. Certainly this stock cannot be declared worthless today. A similar situation applies to the other roads in reorganization or receivership.

Back interest on insolvent railroads is accumulating at the old rate of 5 or 6 per cent per annum, while solvent railroads are refunding at current rates of 3 per cent or less. A solvent road pays interest. A bankrupt road cannot do so, and resorts to the court for protection. Interest should therefore stop from the date of the petition. In the old-style reorganizations, based on negotiation between security groups, the accumulated interest was scaled down or paid in junior bonds or even stock. But in the new-style reorganizations by the I. C. C. interest is allowed to accumulate at burdensome rates and is paid off in cash or in bonds.

Bankruptcy Profitable

The Chicago & North Western reorganization petition was filed in June, 1935. It had outstanding bonds with coupons of 6½, 5, and 4¾ per cent. These high rates were accumulating until the early part of 1944, and thus increased the burden of unpaid interest. After reorganization, however, the railroad issued 4 per cent bonds, which subsequently were refinanced with 3 per cent bonds. If the railroad reorganization had been more prompt, and had left

an equity for the stockholders, the lower interest rates might have been put into effect earlier, and thus saved some of the assets for the small stockholders. But in fact, the insurance companies enjoyed a high guaranteed rate up to 6½ per cent during the entire period of the reorganization until 1944, while the yield on all bonds, government and corporate, was declining rapidly. They did better with their insolvent 6½'s than with their solvent 4's of other roads which were refunded.

There are 19 major railroads in reorganization right now. When they are cleaned up there may not be another railroad reorganization for two generations. Let us not forget that 40 per cent of the nation's mileage has been in reorganization since 1930. This is twice the figure of the great depression of the 1880 and 1890's. A railroad that didn't go broke in the 1930's is not likely to go broke for many years. Does it not seem absurd to make provisions for remote contingencies and to ignore present necessities? We are legislating for an abstraction when reality faces us. In 1936 the I. C. C. pleaded that the reorganization should wait till business had improved and some value could be given to the common stock. But now the I. C. C., after the expected improvements, reverses its stand and says that stock has no value and should be wiped out.

I. C. C. "Saving Face"?

Perhaps the I. C. C. is seeking to save its conscience. Having confiscated the property of hundreds of thousands of stockholders who are pleading with their senators and representatives to save them, the I. C. C. now, instead of facing realistically the vast improvement in the railroad situation; instead of listening responsively, as elected representatives must, to the just wishes of the electorate, ignores these claims and anesthetizes its pained conscience by an abstract and remote proposal which may never have any value. The I. C. C., instead of trying to "save its face," ought to save the stockholders. Since it erred in estimating earnings, it should revise its plans. The I. C. C.'s proposed legislation for future voluntary reorganizations merely diverts the attention of Congress from the pressing demands, from Maine to California and from Michigan to the Gulf, that the Hobbs Bill, ending the elimination of stockholders in current reorganizations, be brought for debate to the floor of the Senate. To eliminate, as the proposed I. C. C. bill does, "carriers in equity receivership or in process of reorganization under Section 77 of the Bankruptcy Act," may be discriminatory legislation.

Many of these so-called "worthless" stocks have been earning from \$15 to \$40 per share. They are paying huge excess profits taxes to the Treasury. In 1944 Rock Island paid \$40 per share in excess profits taxes, the Missouri Pacific \$56 a share and the St. Louis-Southwestern \$130 per share, or more in excess profits taxes than the entire issue outstanding. Dead cows give no milk. The capacity to pay such taxes is clear

evidence that there is definite earning power in these stocks and it is idle fantasy to call them "worthless."

The I. C. C.'s proposed bill has merit, of course, but it would have greater merit if it were made to include the roads now in the courts. The advocates of this bill should welcome the Hobbs Bill to the Senate floor for debate; if there are any doubts, then let the Senate Committee hold hearings to explore some of the moot points. The I. C. C. bill will become realistic in approach if the Hobbs Bill is passed by the Senate first. Every argument for the I. C. C. bill applies with greater force to the Hobbs Bill.

Won't Delay Reorganizations

What is the basis for the opposition? It is said that current reorganizations would be delayed. But the House Judiciary Committee has unanimously denied that delay would result and cited reasons:

"It is not believed that the provisions of the bill will result in any delay in the pending cases. All of the facts in all of the pending cases are already of record. No long-drawn-out investigation in any case would be necessary to enable the court to pass judicially upon the Commission's determination of earning power. The standards by which the new capitalization is to be measured, that is, the actual investment and the 19a valuation, are readily accessible from the files of the Commission, and in most cases have been introduced into the records already before the courts.

"We conclude, therefore, that the enactment of this portion of the bill will not tend to delay the progress of pending plans. Delay, however, would be preferable to confiscation." Hundreds of millions of dollars are involved.

A railroad in reorganization for ten years or more can continue in reorganization for another few months. The Pittsburg, Shawmut & Northern has been in bankruptcy since 1905. The removal of the excess profits tax in 1946 is an additional reason for delay. Income paid to the government in excess profits taxes will now be available to the company to cure the default. If keeping a patient in a hospital a little longer will cure him, is it essential that he be killed just because he has been there for a long time?

The opposition says that speculators will benefit if the Hobbs Bill is passed. But speculators have already benefited because the Hobbs Bill wasn't passed. Look at the price of defaulted railroad bonds in 1940 and 1945. Some bonds that sold at \$1 or less have risen to \$50 and higher. The average of all defaulted bonds has risen 1000 per cent. Why? The funds that should have been allotted and passed to the stockholders have been delivered to the bondholders. But stocks of defaulted railroads are selling at lower prices than in 1932. They are practically at zero.

Besides, this argument is contradicted by its own advocates. First the I. C. C. says nothing is left for the stockholder and therefore the stockholder should be

wiped out. Then it says that speculators, expecting earnings, will buy this "worthless" stock to benefit by the rise. Speculators are not so foolish as to buy worthless securities with no prospect of earnings. Besides, speculation is a democratic affair. It is not a restricted club. Everyone is eligible. There is no waiting list and no black-ball.

Short-term speculators will not benefit if the Hobbs Bill is passed. The evidence is obvious. The transfer books of the bankrupt roads show relatively few transfers for several years. The reason is clear. These stocks are selling for very low prices—down to 25 cents a share. The cost of trading and taxes is prohibitive in a stock in which the market is, say, $\frac{1}{2}$ bid, $\frac{1}{8}$ offered. The spread between the bid and asked prices in relation to the total price makes trading too costly. Furthermore, the size of the market is very limited. Only about two to three hundred shares can be bought or sold at a time. It would be practically impossible to accumulate several thousand shares of stock.

Again the reason is clear. When the stocks of bankrupt roads were listed on the stock exchanges, there was a specialist who had capital and who was compelled to make a free and orderly market. When the stocks were delisted, the trading moved "over the counter." "Over-the-counter" firms are small and without means. They cannot afford to take any risks and, therefore, do not take a position.

The secretary of the National Association of Investment Companies twice telegraphed Representative Sam Hobbs on June 19, 1944, and October 4, 1945, that investment companies, members of the Association, "held no common or preferred stocks at all of bankrupt railroads or roads in reorganization." No speculator was so foolish as to buy them. If the Hobbs Bill is released by the subcommittee, no one can know in advance. All new purchasers would be on an equal basis as soon as the committee released the news.

The present holders are overwhelmingly the holders of several years ago. The transfer books show few changes. These long-term stockholders can benefit only if somebody buys the stocks and bids up the price. True, the new buyers would benefit. But they must necessarily be limited to relatively small amounts of stock, perhaps 1 per cent of the total issue. However, the old stockholders, or the other 99 per cent of the issue, would receive the great benefit. Market studies made in 1939 showed that a 20 per cent fluctuation in the Dow-Jones averages was caused by a turnover of only 1.8 per cent of the total number of stocks listed.

The evil effect on the stockholders of the present bankruptcy procedure is shown in the market quotations (minus fractions) for stocks of solvent and insolvent railroads:

Solvent Railroads	Low Price 1940-1	Recent High 1945
Baltimore & Ohio	2	30
Delaware & Hudson	6	60
Illinois Central	4	42
Missouri-Kansas-Texas	$\frac{1}{4}$	16
N. Y. Central	6	32
Northern Pacific	3	38
Southern	5	53

Prices of shares of the solvent roads rose to reflect the improvement in business.

Insolvent Railroads	High Price 1932-3	Recent Quotations
St. Paul, Pfd.	18	$\frac{1}{2}$ - $\frac{1}{2}$
Rock Island, Pfd.	27	$\frac{1}{2}$ - $\frac{1}{2}$
Missouri Pacific, Pfd.	26	4- $\frac{1}{2}$
New Haven, Pfd.	56	2- $\frac{1}{2}$
Frisco, Pfd.	10	$\frac{1}{2}$ -1

Prices of shares of insolvent roads are below 1932 levels and reflect the freezing of depression conditions. There was and is no speculation in the stock of insolvent roads.

All Gain, Except Stockholders

But, after the common stockholders were wiped out, the reorganized roads' shares showed sensational increases in market prices. Chicago & North Western sold in 1945 higher than 49 and as low as $\frac{1}{2}$ (50 cents) when unlisted. Erie common sold above 20 in 1945 and as low as 4 on the "big board," and lower before listing. There was indeed wild speculation but it was in the new "when issued" stock by new holders while old holders were frozen and wiped out. The old stockholders did not benefit, but could merely observe with chagrin. A similar fate awaits all the other bankrupt railroads in the West, from the Canadian border to the Rio Grande. Other groups of securities of roads, whether solvent or insolvent, participated in the improvement in the railroad situation. The average prices of defaulted railroad bonds (Dow-Jones) sold below 6 in 1939 and 1940 and above 60 in 1945. The average price of solvent railroad stocks (Dow-Jones) rose from 22 in 1940 to 63 in 1945. But the stockholders of the insolvent railroads were frozen in their losses by the evils of the present bankruptcy procedure.

Price Rises Not Sinful

Since 1939 all property has risen in value, except stocks of defaulted railroads. Anyone who has owned a house or a barn, a hotel or a farm, has enjoyed appreciation. Rise and fall of values, speculative gains and speculative losses, are characteristic of a free economy. But in Soviet Russia no individual can speculate, because no individual can own property except personal effects. One of the opponents of the Hobbs Bill suggested that the stockholders could buy the junior bonds and recoup their losses. In other words he himself urges speculation. But suppose they have no money? Are they not entitled to have their own securities rise if the earnings are there? The Hobbs Bill has made strange bedfellows. Its opponents in Washington have Wall street speculators as their allies.

Who owns the railroad shares now? Figures available at the Securities and Exchange Commission, the New York Stock Exchange and at the transfer agents of the railroad companies' stocks show significant statistics. Of the total number of stockholders, between 87 per cent and 93 per cent own less than 100 shares. Obviously, most railroad stockholders are small people.

Percentage of the Total Number of Common Stockholders Classified by Number of Shares Held

	Holders of 1-10 shares	Holders of 1-25 shares	Holders of 1-100 shares
Solvent Railroads			
Baltimore & Ohio	42%	67%	93%
Chesapeake & Ohio	27	52	87
Illinois Central	47	69	92
Central of N. J.	39	55	83
N. Y. Central	43	66	91
Southern Pacific	43	n.a.	92
Insolvent Railroads			
Rock Island	44	61	89
Frisco	40	58	88

Note that the percentages are almost alike in solvent and insolvent railroads. Obviously in the insolvent roads the little long-term stockholders held on. If a few big speculators had bought heavily, the percentage of small holders in the insolvent roads would be smaller than in the solvent roads.

Not Speculators

These small stockholders are not quick-turn speculators. They are long-pull holders. They buy for investment and sit. The stockholders' lists available at the transfer agents confirm this. When the stockholders were asked to express their opinion on the Hobbs Bill, the chairman of the Rules Committee of the House received a very large number of letters, some pathetic, from small stockholders who had lost their incomes and were threatened with the loss of their principal.

If the Hobbs Bill is not enacted, insurance companies and the savings banks will become the owners of the railroads. Look at the institutions represented on the board, or as trustees, of the roads already reorganized. The list looks like an officers' directory of insurance companies. Little people from Maine to California, who expressed their faith in private enterprise by buying shares, have been wiped out by the government through unwise legislation. Their places have been taken by a few powerful financial institutions. These big interests have not dared to appear in public. Their lawyers have not only refused to speak in a public forum when invited to discuss the Hobbs Bill, but by many devices have tried to dissuade the persons advocating the Hobbs Bill.

Stockholders are victims of a legal impasse, and new legislation is required. The I. C. C. commissioners in their report on the reorganization of the Chicago & North Western stated that they "are deeply sympathetic with the attempt to find some method by which the present stockholders might be lawfully afforded a continuing interest in this property. . . . We reluctantly express the view that this is here impossible, for the law as it stands is inexorably against such a course."

A Legal Impasse

The I. C. C. maintained that the law did not permit it to reconsider or modify a plan after it had been submitted to the district court, unless that court had disapproved the plan, and on its own initiative returned it to the Commission. On

the other hand, the court maintained that a finding by the I. C. C. that the stocks of a railroad are without value is final and is not subject to review by the courts. Therefore, under the present law, as interpreted, the Commission's hands are tied by the courts, and the courts' hands are tied by the Commission. Many thousand stockholders were wiped out because of this legal impasse.

A new legal situation has arisen. The Circuit Court rejected the Denver & Rio Grande Western reorganization because the plan "fails to make equitable distribution of the surplus cash and current assets on hand, fails to make equitable provision for the distribution of the excess war profits which may reasonably be expected to accrue." The Hobbs Bill would meet these two legal requirements. The Hobbs Bill would give one share of no-par stock for each \$100 uncapitalized assets. The stockholders who were wiped out or liquidated in the old plans under Section 77 could thus participate in the potential earnings of the reorganized railroads without impairing the rights of bondholders.

Even the Interstate Commerce Commission now admits that Section 77 of the Bankruptcy Act, as amended in 1935, did not work out as intended and now believes that *future* reorganizations should be carried out under moratorium legislation, as under the Chandler Act and its successor, the McLaughlin Act. These provide that interest and principal may be deferred on the vote of 75 per cent of the security-holders. The McLaughlin Act is expiring and a successor law, the Kefauver Bill, will be substituted to permit certain roads to undertake a more moderate form of reorganization. The I. C. C.'s bill relies on voluntary reorganization, outside the courts. Section 77 will not be used in future railroad reorganizations because of its evil effects.

Bureaucracy vs. Democracy

The proponents of the I. C. C. bill should take note of the unanimous report of the House Judiciary Committee and if they cannot answer its argument they should incorporate the Hobbs Bill in the proposed I. C. C. legislation. Then the country would benefit by the new plans for railroad reorganization, not only for improbable future bankruptcies but for pressing present bankruptcies. To block further debate is a denial of democratic process. It is a frustration of the will of the people, which has been abundantly expressed in letters of small stockholders who lost their income and now are threatened with loss of their principal, while speculators have been reaping a harvest.

The I. C. C. bill was introduced on July 12 and hearings were held three months later, but the Hobbs Bill was unanimously approved by the House Judiciary Committee almost 18 months ago, on June 8, 1944. It passed the House almost unanimously over nine months ago, on February 14, 1945. Why should not the I. C. C. bill follow, rather than precede, the Hobbs Bill in receiving Senate consideration?

Meanwhile, stockholders of some roads face early confiscation. The St. Paul is already through the courts. On the Frisco balloting has already taken place and the plan is subject only to court approval. On the Rock Island balloting is due in a few months and court approval should follow soon thereafter. Only prompt emergency action will save these stockholders. Reorganization is not merely a matter of statistics and Commission guesses. There is a human aspect. Close onto a million stockholders are involved.

Eskimos at Peace Conference

The subject of railroad reorganization is large and affects many interests. But one interest is not even being heard. That interest underlies our privately-owned railroads; indeed, it underlies our whole system of private enterprise. That interest is the private investor. This I. C. C. bill deals solely with the creditors, as if the owners were non-existent or as if the government owned the railroads. The actual owners have pleaded, so far in vain, through thousands of letters to Congress. The stockholders have not had their day in court. They have been ignored like Eskimos at the peace conference. Senate committee hearings on the Hobbs Bill would be helpful. Following these hearings, the I. C. C. bill could be amended so as to incorporate the salient provisions of the Hobbs Bill.

Capitalization of the new companies should not be below the valuation of Section 19a. Stockholders' consent to reorganization should be required, if they pay an assessment. In the case of Chicago & North Western and other roads where stockholders were wiped out, the uncapitalized assets should be represented by common stock, deferred stock or warrants, distributed to both old bondholders and stockholders. Their property was taken without compensation. The fact that the railroad was reorganized under harsh provisions of Section 77 is no reason why relief should not be given to the old creditors and the old stockholders. If a man is unjustly imprisoned, certainly the courts free him. If he is unjustly deprived of property, certainly the courts return it. The I. C. C. should be asked to defer completion of reorganization plans now under way until curative legislation is enacted.

Those who believe in private enterprise should bend every effort to preserve the interest of the small stockholders. Commissioner Eastman quoted I. C. C. Ex Parte No. 115 (1937, page 729), in a letter on a railroad reorganization:

"The end in view, as we have stated, is the maintenance of an adequate national railway transportation system. Such a system, so long as it is privately owned, obviously cannot be provided and maintained without a continuous inflow of capital. Obviously, also, such an inflow of capital can only be assured by treatment of capital already invested which will invite and encourage further investment."

Commissioners Hold "Victory" Meeting

Assured that their jurisdiction over intrastate rail rates is firmly established, they dig in to hold similar power in local truck and airline regulation

THE fifty-seventh annual convention of the National Association of Railroad and Utilities Commissioners, which met at the Macfadden-Deauville hotel at Miami Beach, Fla., December 4 to 7, inclusive, was in two senses a victory meeting.

While the convention ban of the Office of Defense Transportation was in effect it had appeared that the meeting could not be held, but the end of the fighting in World War II, of course, was followed by the lifting of such restrictions; thus this convention became possible as a result of victory. Again it was a victory meeting because it provided a forum for restrained but repeated expressions of jubilation over what was described as a major decision favorable to the philosophy of dual regulation of transportation systems and public utilities, in which state and federal agencies both participate in their appropriate spheres, as opposed to centralized federal regulation with the state agencies playing a definitely secondary and diminishing role.

The decision which was thus referred to was that of the Supreme Court of the United States in the so-called *North Carolina Passenger Fare case*, and the companion case, decided at the same time and on the same basis, involving intrastate fares in Alabama, Tennessee and Kentucky. As reported in *Railway Age* of June 16, page 1071, the court held that the "mere existence of a disparity" between intrastate and interstate passenger fares was not sufficient ground for the Interstate Commerce Commission to require conformity therein, and to assert the federal power to enforce its order against contrary findings of state commissions. The importance of this case, the association's president declared, "cannot be overestimated."

Officers Elected

The gathering at Miami Beach was attended by some 385 registered members and guests. In addition to members present from 36 state commissions, the Securities and Exchange Commission, Federal Power Commission, Federal Communications Commission, and Interstate Commerce Commission were represented, the latter by Commissioners William E. Lee, Claude R. Porter, and J. Monroe Johnson. A varied entertainment program was provided, with special arrangements for the women accompanying members, and a banquet featured by numerous speeches topped off the business phase of the convention.



Moffett Studio

John D. Biggs

The association elected the following officers for 1946: President, John D. Biggs, chairman of the Illinois Commerce Commission; first vice-president, Commissioner Duane T. Swanson of Nebraska; second vice-president, Walter R. McDonald, chairman of the Georgia Public Service Commission; general solicitor, Frederick G. Hamley; secretary, Ben Smart; and assistant secretary, Stanley Allyson, the latter three with headquarters at the Washington, D. C., office of the association.

At the previous election, George C. McConaughay of the Ohio Public Utilities Commission had been chosen president of the association, but under its constitution had been disqualified for service, in February, because he was not reappointed to his state commission position upon expiration of his term of office. Thus the previously-elected first vice-president, John D. Biggs, automatically succeeded to the presidency of the association, and in that capacity presided at the Miami Beach convention. In an attempt to bring about a more rapid rotation of the elective offices of the association among the states represented in it, Commissioner James A. Perry of the Georgia Public Service Commission urged, as the balloting got under way, that the convention select Commissioner Swanson as president for 1946, thus following the organization's traditional procedure of elevating the first vice-president of one year to the

presidency the next. Mr. Swanson, however, asked that his name be withdrawn from nomination, so that Mr. Biggs might be honored with a regularly elected term, and the members voting registered their wish to confer such regular terms by election on the officers who had been advanced to those posts during the year through operation of the constitutional requirements.

Upon invitation of the Railroad Commission of California, the association's executive committee selected Los Angeles for the organization's 1946 convention, which is scheduled to be held November 12 to 15, inclusive.

Proceedings at Miami Beach got under way December 4 with welcoming remarks by Millard F. Caldwell, governor of Florida; Herbert A. Frink, mayor, and Thomas F. Smith, convention director, of Miami Beach; and Chairman Eugene S. Matthews and Commissioner Jerry W. Carter of the Florida Railroad Commission. The keynote address by President Biggs opened with a brief review of the transportation situation at the close of World War I, contrasting the substantial rate increases which were effected then, in a period of government operation, with the situation prevailing under private operation through the recent war, when the I. C. C. did not consider it necessary to leave in effect the freight rate increase it had authorized in the Ex Parte 148 proceedings.

"No general demand for increases which can now be foreseen is threatened in the future," said Commissioner Biggs. "The rail carriers during the war years have received larger revenues than ever before. With the disappearance of government war traffic, and of other traffic incidental to war, railroad revenues, of course, will recede; but instead of being threatened with bankruptcy, as after the first World War, the carriers today are enjoying prosperity, and so are the public service companies generally."

Intelligent Management

"This striking contrast between our situation now and the situation which confronted our predecessors at the end of the first World War is gratifying proof both of the comparatively good condition of the country economically during the war years through which we have just passed, and of the good physical condition and intelligent management of our railroads and public utilities during that difficult period."

The powers of the state commissions,

as against that of the I. C. C., were involved in two major proceedings during the year, the association's president went on to say, these being the passenger fare cases already mentioned, where a Supreme Court decision was obtained upholding the states' position, and a major case before the commission, its No. 25020, the so-called *Ohio Sand and Gravel case*, where an order requiring intrastate rates to be advanced to a level with the interstate rates on the same commodities was reversed by the I. C. C. on reconsideration, after the association had argued that the commission had held the Ohio intrastate rates discriminatory solely (and, it asserted, improperly) on a showing that the intrastate rates were lower than the interstate rates.

"Plainly a ruling requiring intrastate fares or rates to be upon a basis of exact equality with interstate fares or rates can afford no scope for the exercise of state power to take into account local conditions and to fix local rates on a just and reasonable basis," President Biggs continued. In the Ohio case, he pointed out, the commission "recognized that a variation between intrastate and interstate rates might be justified by evidence," but the Supreme Court went even further in the North Carolina case. "It established the law to be that mere variation in rates is not evidence of discrimination upon which the commission can base a finding of unlawful discrimination. There is, accordingly, no burden upon a state to justify rates ordered by its regulatory commission. The burden rests upon any party challenging intrastate rates to present evidence which will support a finding that intrastate traffic is not bearing its fair share of the transportation burden; and proper basic findings establishing that fact must be made by the commission before it can act in the state field."

Want Part in Plane Regulation

Inasmuch as the state commissions long have been contesting, at their national conventions and in court and I. C. C. proceedings, what they have considered to be invasions of their jurisdictional domain by the federal commission, this Supreme Court decision was obviously much to their liking, and was regarded as a substantial victory in the cause of state regulatory power. Nevertheless, the association was warned by its president, there is again "danger of legislation for destruction of the state power," this time particularly in the field of aviation.

"There is this difference," he added, "between the development of aviation transportation and the development in the past of railroad and motor carrier transportation. Those industries were developed first locally. Long distance transportation was an expansion of local development. The reverse is true with respect to commercial aviation. The first large development . . . came about in long distance transportation and was, accordingly, principally interstate in

character. . . . It accordingly came about that the need for regulation of the rail and motor transportation industries was first felt locally, and was first supplied by the state governments. Federal regulation came only when the need for it was felt, after the development of long distance transportation. On the other hand, however, the need for federal regulation of interstate air transportation was felt and supplied before local air transportation came into existence.

"The development of local air transportation is now at hand and is in progress. . . . The question, however, is whether this shall be a full and well directed development which will adequately meet the local demands of our people. Such a development cannot be expected if it must depend upon the big air lines, which today dominate the field of long distance transportation. . . .

Airlines Like Centralization

"The big lines now dominate the aviation industry, operating under federal regulation. They naturally desire to keep things as they are so that, in their own good time, under federal authority, they may make such extension of local service as they deem most desirable. They want no state-authorized air carriers engaged in commercial operations, in a field which they regard as belonging to them. The big airlines are, accordingly, supporting legislation designed to vest in the Civil Aeronautics Board exclusive power to regulate all carriers carrying any traffic whatsoever in the course of movement from a point in one state to a point in another, even though the operations of a carrier, and the air transportation of all of its traffic, may be wholly confined to a single state.

"The effect of that proposed legislation plainly would be to strip the states of all effective control of local air transportation. . . . Because local commercial aviation is as yet practically non-existent, there probably will be little protest either from local air carriers or from the public. At the same time, the C. A. B., willing to gain more power, favors the legislation. This disposition on the part of this federal agency is not altogether unique. . . . In this situation there is grave danger that the Congress may be misled into destroying state power over local aviation, as a part of the post-war rehabilitation program, just as Congress seriously curtailed state regulatory power in the field of rail transportation after the first World War."

This phase of the state commissions' long-sustained concern over concentration of governmental power in Washington was developed at greater length in an address, at a later session of the convention, by Justus F. Craemer, a member of the Railroad Commission of California, which address was the concluding one of several that complemented the usual committee reports and other business activities of the association. Mr. Craemer reminded the gathering that aviation enthusiasts and technicians already are predicting that the use of the supercharger in commercial planes will

make a \$50 coast-to-coast fare possible within ten years.

Keeping the Public Interested

The "transportation problem" was reviewed by Col. J. Monroe Johnson, director of the O.D.T., on December 4 in the first of the specially programmed discussions. The problem as he outlined it is one of many facets, most of them familiar but nevertheless important ones. A question of special importance to the regulatory agencies, he pointed out, is how to sustain the interest of the people in transportation, now that the war is over. In times of peace the public has had little interest in transportation matters, generally speaking, he contended, for the reason that it has had an abundance of transportation available. While the war was going on more interest was shown because transportation facilities were taxed to the limit, and it would make a lot of difference to the regulatory agencies if this public interest in transportation could be made to last after there is again plenty of transportation available for all.

That time has not yet come, Colonel Johnson added, since the difficulties confronting transportation now are as serious, except as to absolute urgency, perhaps, as when the fighting was going on. In evidence of the importance he attached to these still unsolved difficulties he then disclosed, as reported in *Railway Age* last week, that he has had to forego his earlier plan to relinquish substantially all of his O.D.T. administrative responsibilities at the year's end. Probably at least six months of the new year will have passed, he predicted, before the situation has eased sufficiently for him to feel that it is close enough to normal for the O.D.T. to cease active operations.

Despite the continuing difficulties confronting the transportation industries, the nation was peculiarly fortunate, so far as its transportation was concerned, that the war came to an end when it did, the speaker asserted. If it had lasted another twelve months the Army, the Congress and the people would have realized the meaning of the transportation shortage over which the O.D.T. was expressing alarms that were not being taken very seriously, he declared. The Army's demands for more and more equipment of every kind made it difficult, the O.D.T. director reminded his audience, to provide any rail or freight cars for the railroads, and construction of passenger cars was absolutely out of the question—"but what would the Army and the Navy give now for 10,000 passenger cars?"

As conditions do get back to normal, and especially if general public apathy toward transportation problems becomes the rule again, there will be a great danger that the transportation plant will not be maintained at the capacity that should be available for another period of emergency, Colonel Johnson added. In view of such a possibility, he concluded, it will require all the powers of

all the regulatory commissions, state and federal, and their fullest cooperation—devoid of jealousies and controversy—to see that the country emerges from reconversion and the early post-war period with the transportation facilities and service it deserves to have.

Cost of "Federal Aid"

Another speaker at the convention, and the only one not a member of the association, was Representative Hatton W. Sumners, Democrat of Texas, the chairman of the House judiciary committee, to whom was assigned for discussion the importance of the preservation of state sovereignty. Presenting in homespun terms the basic philosophy of coordinated state and federal power in government, as opposed to the concentration of its functions in Washington, the congressman warned his audience that the sovereignty of the states cannot be preserved if the states continue to rely on the federal government for the money with which the functions of local government are performed.

It is axiomatic, the speaker observed, that the power of government goes with control of the pursestrings. At present, he said, every state in the union is in better financial shape than the federal government, yet Congress has just voted immense appropriations to the states to build highways, to build airports, with no objections from the states. Noting that the association, in its deliberations, put great stress on the importance of maintaining state authority in the regulatory field, he commented that he would "bet a hundred dollars" that no member of the association had protested to Congress when these immense "state aid" appropriations were being considered.

If the federal government is to continue to afford the states financial relief of such magnitude and still remain solvent, Mr. Sumners declared, it will have to tap sources of revenue that heretofore have been reserved to the states, thus further invading the field of sovereignty left to them. This would be but a further step in a process that has been going on for a long time, a process that has resulted in the concentration of so much responsibility in Washington that the state governments have lost the vigor essential to accomplish many of the purposes for which they have existed, he continued.

Because it is admittedly more difficult for the states in these times to perform all of their functions of government, it has become more and more "the thing to do," the speaker pointed out, to avoid meeting these difficulties by turning them over to Washington for solution. Already the federal government is too big and too complex for human control and understanding, he contended, and he pictured the world, and this country especially, as making in government the "colossal failure of all the ages." Along with the technical and scientific advances of these times have come correspondingly more difficult problems for government, and the states cannot go on avoiding these greater difficulties, in the

speaker's opinion, if democratic government in this country is to be preserved.

Other specially programmed addresses were made by Richard B. McEntire, chairman of the State Corporation Commission of Kansas, and Warren Henry of the Illinois Commerce Commission, each of whom discussed the natural gas investigation of the Federal Power Commission, now in progress, from the viewpoints, respectively, of a producing and a consuming state; by John E. Benton, advisory counsel of the association, and Clyde O. Fisher, a member of the Connecticut Public Utilities Commission, both of whom dealt with aspects of public utility rate bases and the measure of a "fair return" thereon; and by Federal Communications Commissioner Paul A. Walker, whose assigned topic was the future of telecommunications as affected by war-time developments.

In ranging over the immense field embraced in his subject, Commissioner Walker observed that "recent experiments have proved that radio communication from front to rear of trains, from train to train, as well as from railway station to train, can be used effectively. The safety and security implications of this are very great. The cumbersome and often inefficient use of flags and lanterns for signaling purposes has contributed to many serious accidents on our railroads. With radio, train crews will have an efficient means of instantly communicating with one another. This should greatly improve service, reduce the hazards of travel and save life and property."

The usual reports of the association's standing and special committees were received by the convention, which followed its regular practice of receiving and ordering printed such reports without other action. Preceding these, however, was a review of the activities of the association's Washington office, presented by General Solicitor Hamley, in which he developed further the "victory" theme expressed in the opening address by the association's president. As a result of the Supreme Court's action in the North Carolina fare case, he pointed out, "the primary jurisdiction of the state commissions with respect to intrastate railroad rates is now more firmly established than heretofore for many years."

Continuing, he asserted that the decision means that the federal commission, in applying the "discrimination against interstate commerce" test in assaying intrastate rates, cannot "interfere with" those rates "unless it finds (1) that the intrastate rates are less than compensatory or insufficient to cover the full cost of service, or (2) that the maintenance of higher intrastate rates is necessary to the operation of a nationally efficient and adequate railway system. In the event that the commission's order is based upon this latter ground, then there must be a finding," he said further, "as to what contribution from intrastate traffic would constitute a fair proportion of the affected railroad's total income, and a finding as to what amount of revenue is required to enable such railroad to operate efficiently."

The North Carolina passenger fare case also was discussed at some length in the report of the association's committee on cooperation between state and federal commissions, which was presented by Commissioner Edwin A. Rosenstone of Illinois. This report also considered other major cases where "co-operation" between state commissions and the I. C. C. involved consideration of alleged discrimination against interstate commerce through the operation of lower intrastate rates or fares, including the *Ohio Sand and Gravel case*, referred to previously; the *Illinois Bituminous Coal case* (I. C. C. No. 28881); the *Texas Intrastate Rate case* (I. C. C. No. 28846), where the chairman of the Railroad Commission of Texas had objected that the Interstate Commerce Commission's procedure "is certainly not conducive of cooperative proceedings between the state and federal commissions"; and the more recent *Merom Gravel case* (I. C. C. No. 29236).

Transport Surveys by States

Pointing out that the House committee on interstate and foreign commerce has "launched a national transportation inquiry," the association's committee on progress in the regulation of transportation agencies, in a report presented by Matt L. McWhorter, vice-chairman of the Georgia Public Service Commission, proposed that "the regulatory commissions of each state may do well to conduct their own individual surveys of the transportation situation as it exists, and as it ought to be developed, to adequately meet the public need."

Commenting on the near-term prospect, this report said: "Reserves which carriers were required, in some cases, to set aside during the lush war years will now have to be carefully supervised, so that they will inure to the long-term benefit of the general public. State commission plans to investigate particular transportation situations, which had to be laid on the shelf during the war, will now be taken down, dusted off, and in many cases put into operation. Rundown carrier facilities which were necessarily tolerated during the war will no longer be tolerated, and careful supervision of sound replacement programs will be necessary. The extremely narrow margin on which many trucking lines are now operating will become a matter of increasing concern."

Oppose "Big Truck" Bill

Discussing motor carrier regulation further, this report commented on two bills "proposing fundamental changes in the present regulatory pattern." One (S. 549, introduced by Senator Magnuson, Democrat of Washington) was described as "the current version of the big truck legislation which has been constantly before Congress since 1935." Of this proposal the report said, "that there is less need than ever before for legislation of this character is indicated by the fact that the legislatures of 21 states enacted statutes during 1945 liberalizing

their weight and length limit laws." The other major bill referred to was H. R. 3262, introduced by Representative Cole, Republican of Missouri, which, it was explained, would extend the so-called thirteenth section powers of the I. C. C. to intrastate motor carrier rates.

The "big truck" bill was discussed in detail also in the report of the committee on legislation, presented by Chairman Walter R. McDonald, in which it was remarked that the proposal "involves the same disregard of basic principles of government and the same practical objections" as other measures intended to "set aside state laws regulating the size and weight of motor vehicles operated by carriers on the highways in interstate commerce." The committee proceeded to recommend a resolution reaffirming the association's opposition to S. 549 or to any form of legislation that "will result in subjecting the highways of the states to the operation of motor vehicles thereon in violation of the laws of such states," as well as to legislation such as was proposed in the "interstate trade barriers" report of the defunct Board of Investigation and Research, and this resolution was subsequently adopted by the convention.

Bulwinkle Bill Favored

Other resolutions which were put before the association with executive committee approval, and which were adopted without any expression of objection, renewed the association's support of the Bulwinkle bill (H. R. 2536) to exempt carrier joint action for rate-making and similar purposes, under I. C. C. supervision, from the operation of the anti-trust laws; and stated the association's unequivocal opposition to the extension to motor carrier rates of the so-called thirteenth section powers of the I. C. C.

Two resolutions which likewise were approved dealt with the regulation of intrastate commerce by air, setting forth the association's "unalterable opposition" to federal legislation that might interfere with the regulatory functions of the states in that field.

Only one of all the proposals put before the convention for a vote elicited any expressed disagreement, and that was a resolution setting forth the association's appreciation for the entertainment that had been provided for the Miami Beach convention. Objection to such an expression was voiced by Leon Jourolmon, Jr., a member of the Tennessee Railroad and Public Utilities Commission, who not only questioned the propriety of accepting such entertainment but proceeded to challenge the right of certain guests, who were, he said, representatives of utilities subject to the regulation of state commissions, as well as of Rutledge Smith, assistant to the president of the Tennessee Central Railroad, to be present at the convention sessions. There was no expression of support for Mr. Jourolmon's views, however, and no other vote was cast in protest against accepting or expressing appreciation for entertainment of the kind afforded the convention.

Electrical Section Reports

Studies made include effects of electrolysis, wind-driven battery chargers, de-icing coal chutes, new types of motors, and lighting developments—Wire crossing standards are completed

THE 1945 reports of the Electrical Section, Engineering Division, A. A. R., were reviewed in New York by the Section's Committee of Direction on December 5, and plans laid for Section activities during the coming year.

Subjects reported on were Power Supply, Electrolysis, Overhead Transmission Line and Catenary Construction, Electric Heating and Welding, Motors, and Illumination.

Membership of the Committee of Direction is as follows: J. E. Gardner, electrical engineer, Chicago, Burlington & Quincy; R. Beeuwkes, electrical engineer, Chicago, Milwaukee, St. Paul & Pacific; S. R. Negley, electrical engineer, Reading Co.; D. B. Thompson, mechanical and electrical engineer, New York Central System; K. H. Gordon, assistant electrical engineer, Pennsylvania Railroad; Paul Lebenbaum, electrical engineer, Southern Pacific Company; J. M. Trissal, superintendent, communication and electrical engineer, Illinois Central System; H. F. Brown, assistant electrical engineer, New York, New Haven & Hartford; C. A. Williamson, electrical engineer, Texas & New Orleans.

Power Supply

Committee No. 1 on Power Supply reported on its assignment No. 2—Windmill battery chargers for small power demands in remote locations.

The Illinois Central has made three installations of windmill battery chargers for the operation of highway crossing protection at outlying locations where commercial power is not available. One of these is in Iowa and two are in Illinois. The installations are at crossings where the protection consists of flashing light signals, formerly operated on primary batteries.

The windmill - driven generator charges a 160-hour, 5-cell battery at a maximum rate of 7 amp., and an average rate of 1.5 amp. during the time the wind is blowing. If the battery voltage falls below 5.59 volts, it is automatically disconnected and a primary battery introduced into the light signal circuit. In locations where the installations have been made, the storage battery has been kept charged and the primary battery has not yet been ca'ed upon. The annual average saving for each installation, as compared with the cost of operating exclusively on primary batteries, is approximately \$65.

The report is signed by C. F. Trueax (chairman), assistant electrical engi-

neer, Illinois Central System; S. D. Kutter (vice-chairman), assistant engineer, New York Central System; R. Beeuwkes, electrical engineer, Chicago, Milwaukee, St. Paul & Pacific; H. F. Brown, assistant electrical engineer, New York, New Haven & Hartford; H. A. Hudson, signal and electrical superintendent, Southern Railway System; R. J. Needham, mechanical and electrical engineer, Canadian National; J. A. Shaw, general electrical engineer, Canadian Pacific.

Electrolysis

The study of electrolysis of steel in concrete was assigned to the research staff of the Engineering Division in 1943. Randon Ferguson, electrical engineer, has been in charge of the tests and of preparing the report, under the direction of G. M. Magee, research engineer. The work is being carried on under the general supervision of a special sub-committee of the Committee on Electrolysis of the Electrical Section.

The tests consisted of measuring current flow and noting corrosive effects on one inch round iron rod specimens placed in the ground and subjected to a direct current potential of 25 volts to ground. In a few cases alternating current was used. The specimens were encased in circular concrete forms of varying diameter. In some instances admixtures were used in the concrete, and in others the outside of the concrete cylinder was encased in an iron pipe or was coated with asphalt. The tests were started June 9, 1944, and on July 16, 1945, the specimens were removed from the ground and examined.

The 3-in. diameter concrete cylinders were badly broken and disintegrated, and even the 25-in. diameter concrete cylinders were cracked from the center to the edge, a condition indicating forces created by corrosion of the rods and disintegration of the concrete due to passage of the current. The quality of the concrete was also greatly reduced in the cylinders encased in steel pipe. The ends of the rods on all d.c. specimens were pointed and the rods shortened.

In the case of cylinders painted with asphalt there was very little current flow, and no appreciable reduction of weight of the rods due to corrosion. There was also no appreciable corrosion of the specimens subjected to alternating current. The admixtures used in the concrete did not appreciably reduce the amount of corrosion. Some addi-



A 3-In. Diameter Concrete Specimen Completely Disintegrated After 13 Months of Electrolysis Which Began with the Flow of .42 Amp. and Concluded with .12 Amp.

tional work is contemplated with other types of specimens.

On the basis of observations the committee has drawn the following conclusions:

(a) Increasing the thickness of concrete covering around reinforcing steel reduced the rate of electrolytic corrosion but did not effectively eliminate it to prevent cracking of the concrete.

(b) Admixtures included in the test were not effective in controlling electrolytic corrosion.

(c) The presence of the steel covering reduced the rate of electrolytic corrosion, but did not effectively eliminate it, and resulted in some deterioration of the physical strength of the concrete.

(d) The asphalt membrane waterproofing covering of concrete provided an effective means of eliminating electrolytic corrosion of reinforcing steel and deterioration of concrete.

(e) The electric potential maintained between the specimen and the ground resulted in a surface deterioration of the concrete of all uncovered specimens subjected to direct current. The presence of some cinders, especially in the top portion of the sand and clay soil surrounding the specimens, may have been a factor in this deterioration, but this is a soil condition generally encountered near railway tracks.



A 25-In. Diameter Specimen in Which the Current Flow Declined from .39 to .14 Amp. During the 13 Months' Test Period

Examination was also made of a concrete catenary foundation on the Illinois Central where a maximum flow of one to two amperes direct current had been observed during the interval of train passage. The foundations had been in service 20 years and subjected to this current for perhaps 10 per cent of the total time.

While damage to the foundation did not indicate any need of repair, it was evident that the anchor bolts were being subjected to corrosion which is proportional to that found in the test specimens.

The report is signed by A. E. Archambault (chairman), assistant engineer, New York Central; H. P. Wright (vice-chairman), assistant electrical engineer, Baltimore & Ohio; R. Beeuwkes, electrical engineer, Chicago, Milwaukee, St. Paul & Pacific; Paul Lebenbaum, electrical engineer, Southern Pacific; Orris McGinnis, public service engineer, Western Union Telegraph Company; G. K. Shands, electrical foreman, Virginian Railway; J. M. Trissal, superintendent of communication and electrical engineer, Illinois Central; S. M. Viele, assistant engineer, electrical department, Pennsylvania Railroad.

Overhead Transmission Line

After many years of work, Committee No. 3 on Overhead Transmission Line and Catenary Construction is ready to submit the work it has done relating to crossings of electric supply lines with the facilities of steam and electrified railways. Principles and practices relating to these crossings and recommended minimum specifications have been prepared. The work has been facilitated by a joint committee with representatives of the Edison Electric Institute and the Electrical, Signal and Communications section of the A. A. R. The committee is now ready to submit its report for rejection or approval of the several associations involved.

The Electrical Section report is signed by K. H. Gordon (chairman), assistant electrical engineer, Pennsylvania Railroad; A. B. Costic, electrical engineer, Delaware, Lackawanna & Western; S. W. Law, signal engineer, Northern Pacific; John Leisenring, electrical superintendent, Illinois Terminal; S. R. Negley, electrical engineer, Reading Company; H. H. Newman, catenary foreman, Illinois Central; P. E. Snead, assistant engineer, signaling and electrical department, Southern Railway; Sidney Withington, electrical engineer, New York, New Haven & Hartford.

Electric Heating and Welding

Committee No. 5 on Electric Heating and Welding has given its attention to safety devices for alternating current welders and to means for preventing the freezing of coal in the chutes of wayside coaling stations.

The a.c. welder protective devices consist of open circuit voltage reducing control. One railroad tested four makes

of control, and found three of them satisfactory. The three acceptable devices used open circuit voltages in the range of 24 to 33 volts. The fourth make used a voltage of about 5 volts, but at this low voltage contact resistance caused some trouble with the actuation of the relays. Protection of the operator in all cases was effective.

The problem of preventing coal from freezing in the spouts and aprons of outlying coaling stations in severe weather is one which has defied entirely successful solution for a number of years, stoves and steam heat coils having been used with indifferent results. Electrical heating attempts were retarded for want of the right kind of resistance wire. The report describes some satisfactory installations, some of which use heater strips, and others industrial heating cable looped lengthwise on the underside of the chute. The heater units are rated 500 watts at 230 volts, and are connected, two in multiple, into six pairs, divided among three phases of a three-phase four-wire delta circuit.

The heater cables employ three 120-ft. sections on each chute, each cable requiring 800 watts, or a total of 2.4 kw. per chute.

The report states that considerable care must be taken when installing either type of heating elements to insure that the amount of heat is held to the absolute minimum required to prevent freezing, as too much heat causes vapor to arise from coal of high moisture content, which moisture in turn freezes above the protected part of the chute.

The report is signed by C. A. Williamson (chairman), electrical engineer, Texas & New Orleans; J. C. McElree (vice-chairman), electrical engineer, Missouri Pacific; G. K. Shands, electrical foreman, Virginian; A. G. Stradling, superintendent, telegraph and signals, Chicago, Indianapolis & Louisville; E. T. Wiltsee, electrical inspector, Illinois Central; R. P. Winton, welding engineer, Norfolk & Western.

Motors

The subject of motors assigned to Committee No. 6 is concerned with motor and control equipment development, power factor correction, motors for machine tool drives, and motor protection. Improvements mentioned are as follows:

1. Better insulating materials which permit of higher safe operating temperatures and make possible the use of a frame of similar size for the same power.

2. Higher speed motors up to 60,000 r.p.m. developed for the aircraft industry, which employ higher frequencies up to 400 cycles. This also permits of very small size motors for a given horsepower.

3. Electronic control which makes possible a wide range of stepless speed control for alternating type motors.

4. Electronic conversion devices which permit the use of power from a standby alternating current line to be used during an emergency, or when it is not economical to operate a large generator for power required by a limited electric load.

The report goes into some detail to explain the cause and effect of low power factor, and presents curves to show how synchronous motors and static condensers can be used economically for power factor correction.

The report recommends specific types of mounts and motors for converting machine tools to direct drive. The possible benefits accruing from a change from line shaft to individual drive are listed as follows:

(a) Elimination of expensive and complex line-shafting with attendant bearing lubrication and belting problems. Elimination of possible injuries resulting from contacts with shafts and belting.

(b) Savings in floor space made possible by arrangement of the machines independently of the requirements of line-shaft drives.

(c) Increase in the number of available speeds.

(d) Reduction in the number and length of shutdowns due to failure of the power for group driven machines.

(e) Improved lighting made possible by the removal of overhead shafting and belting.

The section on motor protection refers to the many improvements made in time-lag fuses, and also emphasizes the importance of having circuit breakers controlled by relays which are located where they will be subjected to the same surrounding temperatures as the motor. Such devices are sometimes installed within the motor itself.

The report is signed by A. P. Dunn (chairman), electrical foreman, Michigan Central; J. A. Cooper, electrical engineer, Wabash; C. P. Trueax, assistant electrical engineer, Illinois Central; A. B. Miller, electrical inspector, Chicago & North Western; G. O. Moores, electrical foreman, Baltimore & Ohio.

Illumination

Under the subject of general comment, the report of Committee No. 10 on Illumination refers to an electric locomotive repair shop in which the light level was raised from a rather spotty 3 to 5 foot-candles to a well-distributed 20 foot-candles. A comparison of the operating records in the six months preceding the installation showed the following improvements:

Output of locomotives per day	10% increase
Locomotives returned to shop by inspectors because of poor workmanship	80% decrease
Reportable accidents	43% decrease
Non-reportable accidents	41% decrease

New light sources described in the report are the so-called "slimline" and "circline" fluorescent lamps. Neither of these lamps is yet in commercial production, but it is expected that they will soon be available. The "slimline" lamps will be made in 42, 64, 72 and 96 in. lengths. The "circline" lamps will be made in 8½, 12 and 16 in. circles or rings.

The use of plastics as applied to lighting installations was quite generally con-

demned. The report states that all of the available types are subject to one or more of the following undesirable features:

1. Dimensional changes under varying atmospheric conditions.
2. Low light transmission.
3. Unsatisfactory behavior under exposure to heat.
4. Change of color with age.
5. Change of pliability with age, resulting in brittleness and a tendency to crack.
6. Warpage under service conditions.
7. Instability of formed shapes.
8. Development and retention of surface static which attracts and holds dirt.

This section of the report is concluded with the statement "the use of plastics in lighting installations should therefore be approached with caution."

The committee has given some attention to the burning of standard lamps in series as a means of reducing copper requirements. The report does not recommend this practice for general application.

Terminal Lighting

The final section of the report deals with the lighting of engine terminal facilities, including special requirements for servicing Diesel locomotives. Con-

cerning this subject the report states "the lighting of terminal facilities for steam and Diesel locomotives is under active consideration. The usual method of lighting is by means of pendant reflectors for overhead lighting and angle reflectors mounted from 8 to 14 ft. above the floor for illumination on the sides and running gear of the locomotives. Usually, lamps of inadequate capacity are used and open type reflectors make maintenance difficult."

"Several railroads are now experimenting with fluorescent lamps for this purpose. The fixtures, while of the open type, are arranged so as to make maintenance relatively easy and effective. A further report on this subject will be made when more information is available."

The report is signed by E. R. Ale (chairman), foreman, electrical department, Pennsylvania Railroad; L. S. Bilau (vice-chairman), assistant electrical engineer, Baltimore & Ohio; J. E. Gardner, electrical engineer, Chicago, Burlington & Quincy; H. A. Hudson, signal and electrical superintendent, Southern; S. D. Kutner, assistant engineer, New York Central; R. A. Mylius, assistant electrical engineer, Virginian; G. L. Sealey, assistant electrical engineer, Reading Company; C. A. Williamson, electrical engineer, Texas & New Orleans.

Enlarge Locomotive Shops

(Continued from page 978)

ash-handling systems of the latest type, the latter involving a new 35-ton elevated concrete ash storage silo, fed by a pneumatic ash conveyor system, and discharging directly into cars on an adjacent track for disposal, and the former involving a new 260-ton elevated concrete storage silo, a 40-ton-per-hour single-roll crusher, and a vertical, Reddler-type closed-circuit elevator with a capacity of 40 tons per hour. In the latter layout, cars spotted on an unloading track directly beneath the storage silo dump into a 38-ton capacity track hopper, from which the coal passes downward into a crusher pit, and, via reciprocating-plate-type feeder, directly into the crusher. From the crusher the coal is elevated to the top of the silo in the closed-type elevator, which extends continuously beneath the crusher, up one side of the silo, over the top, and back down the other side to the crusher.

From the silo, the prepared coal is delivered to the stoker hoppers of the various boilers in a second closed-circuit, mass-flow mechanical conveyor, this conveyor extending in a horizontal loop within the firing room and having a delivery capacity of eight tons an hour—which is more than adequate to keep all of the hoppers supplied with coal.

The new journal packing storage building and the new acetylene generating building are of brick and concrete construction, the former, used for stor-

age only, and not for reclaiming purposes, being one-story high and approximately 50 ft. by 20 ft. in plan. The acetylene generating building, on the other hand, equipped with four 300-cu. ft. per hr. acetylene generators, is approximately 56 ft. by 30 ft. in plan, and includes a one-story carbide storage room, a two-story generator room, and a one-story oxygen manifold and storage room.

Inter-communicating System

To connect all of these new and enlarged facilities, the work at Livingston included the laying of approximately 6,000 ft. of concrete roadways and the installation of an inter-communicating system. By means of the latter the shop superintendent's office in the new storehouse can page foremen or workmen through four loud speakers located in the new locomotive shop, four loud speakers in the old locomotive shop, and one each in the power house, the car repair shop, the blacksmith shop, the boiler and tank shop, and the work equipment repair shop.

The engineering, detailed drawings and construction of the new facilities at Livingston were done under contract by the Seattle office of the Austin Company, engineers and builders, Cleveland, Ohio, acting with the engineering and mechanical departments of the Northern Pacific. C. R. Hansen, assistant engineer, represented the interests of the railroad company in the field.

Johnson Honored at Testimonial Dinner

Association of American Railroads sponsors tribute to O. D. T. director; armed services and Short Line Association join in presentation of scroll

WASHINGTON, D. C.

COLONEL J. MONROE JOHNSON'S "major contribution to the success of our arms" was recognized on a scroll presented to the director of the Office of Defense Transportation at a testimonial dinner given in his honor by the Association of American Railroads at the Mayflower Hotel, Washington, D. C., on December 6. The dinner was attended by about 400 guests, including members of the President's cabinet, Congressional leaders, members of the Interstate Commerce Commission, representatives of the armed services, and the colonel's past and present associates at O. D. T.

The scroll, presented by J. J. Pelley, president of the A. A. R., who presided at the dinner, embodied a joint tribute signed by Secretary of War Robert P. Patterson, Secretary of the Navy James V. Forrestal, James M. Hood, president of the American Short Line Railroad Association, and Mr. Pelley. The tribute read as follows:

Representatives of the armed forces of the United States and of the railroads of the nation present to Colonel John Monroe Johnson, a veteran of World War I, this memorial of the distinguished service which he rendered to his country as commissioner in charge of the Bureau of Service of the Interstate Commerce Commission, and during the critical period of the late war, as director of the Office of Defense Transportation. He has discharged the difficult duties of these responsible positions with rare ability, great industry and unfailing devotion to duty. He has made a major contribution to the success of our arms. He deserves well of the country.

Favors Unified Regulation

Responding to the tribute, Colonel Johnson asserted that "the credit for winning the battle of transportation was due to the splendid—even miraculous—cooperation of all involved." Looking ahead, he predicted that the problems affecting all transportation "will continue to be serious during the years of peace." And he went on to suggest that the committees of the House and Senate should "give some thought to the future of transportation and to the creation of a permanent agency so that all the activities of transportation would be in one place, including the I. C. C. and all the other commissions." Colonel John-

son added that "transportation in this country will never come into its own until this is done; when each form of transportation is subject to the same authority and so directed as to perform that phase of transportation for which it is best equipped."

Other speeches were Mr. Pelley's address and the remarks of Representative A. L. Bulwinkle of North Carolina, who represented Chairman Clarence F. Lea of the House committee on interstate and foreign commerce with respect to that phase of the dinner program which commemorated the 150th anniversary of the committee's organization. Chairman Burton K. Wheeler of the Senate committee on interstate commerce introduced Mr. Bulwinkle.

"Mike" Gormley Pointed Way

In that part of his address which reviewed the wartime achievements of the transportation agencies, Colonel Johnson said that shortly after he was appointed to the I. C. C. he heard "that transportation saint, Mike Gormley," sound this keynote: "If we never use a railroad car for storage of cargo we will have all the transportation that this great nation needs in peace or in war, for its commerce, its Army, and its Navy." That, the O. D. T. director went on, "has been my slogan, and those who violated that precept would have gone to jail if it had been left entirely with me."

In attributing the winning of the "battle of transportation" to the "cooperation of all involved," the O. D. T. director identified the cooperators as "the various organized voluntary committees such as the National Association of Shippers Advisory Boards with their contact committees numbering 7,000; the National Industrial Traffic League; Associated Traffic Clubs; the 1,600 grain committees; the coal committees at ocean and lake ports; the 2,500 highway committees with 125,000 members; the petroleum, waterways, tank car and refrigerator car committees; and the Interstate Commerce Commission-Office of Defense Transportation confidential committee."

"Besides these," he went on, "fullest credit is due to the transportation men actually running transportation—the A. A. R., the American Short Line Railroad Association, the waterways associations, the truck and bus associations, the airways associations, to these associations collectively and to all their members individually. The executives man-

aging transportation and all the men who worked so faithfully in the operation of trains, trucks, barges—all of them—share in the credit.

"More Miraculous"

"Shippers cooperated with each other, with the carriers and with the O. D. T. There was fullest cooperation between railroads, and more miraculous, there was cooperation between railroads and truckers; and more miraculous still, there was cooperation between the government and the railroads. And by cooperation I mean affectionate cooperation."

While Colonel Johnson does not believe in the government running business, he nevertheless asserted that representatives of O. D. T. have been "very successful in running transportation facilities taken over by the government." These O. D. T.-operated facilities have included the Toledo, Peoria & Western, the Illinois Central, Middle West truck lines, the local transit lines in Washington, D. C., and the Great Lakes Towing Company. "These operations," the O. D. T. director asserted, "have not, and will not, cost the government a nickel."

He then turned to his discussion of figures showing "how the various transportation agencies have handled vastly increased traffic with less equipment than in the last war." There he calculated that altogether the increased efficiency of railroad operations was equivalent to adding 605,210 new freight cars.

"With all this increased efficiency," he added, "Uncle Sam actually saved money by letting the railroads operate their own properties under O. D. T. guidance. In World War I, the government took over the railroads at a cost of \$2,000,000 per day. In World War II the railroads paid the federal government \$4,000,000 per day in taxes and if we include state and local levies the total comes to \$5,000,000 per day. Through the entire war, the railroads waged the transportation war on their own money, with no federal financing."

Stressing the fact that there is still a war job to do in getting the boys home, Colonel Johnson asserted that the railroads had thus far met all demands of the Army and Navy, who are "the best little demanders you ever saw." He then revealed that the total figure for estimated arrivals on both coasts has "jumped" to over one million for December. "And if we are to include all interior moves," he continued, "the rail-

roads will be carrying 1,470,000 men this month. It is the peak personnel movement of the war. There has never been such a troop movement in history.

"But difficult as this task is, we are glad that the fighting is over and to realize that no lives, the issue of no battles, depend on this movement. We can do the job. Every Pullman car that can possibly be taken from railroad service has been turned over to the Army and Navy. But there are bound to be 'backlogs' as this gigantic troop movement goes on. There simply are not enough trains and cars to carry all the men when ships arrive at a port in groups, bunched with sometimes as many as 30,000 men in a single day.

"As more service men arrive at our ports needing rail transportation across the country, it is inevitable that comforts lessen and delays increase. This we cannot help. Reconversion will require a good deal of transportation. But I assure you that our number one job is to bring the boys back. . . . Through next June transportation facilities will be scarce; traffic will be heavy all next year; and the transportation situation will continue to be precarious for several years to come."

The latter statement introduced Colonel Johnson's suggestion that Congressional committees should be giving thought to future transportation problems. Here also he noted how O. D. T. as an organization is "rapidly fading away," although he expects to be active as O. D. T. director "for six or eight months." In closing he said that his experience in the directorship "has been so pleasant that if it would not be a crime to say so, I could almost wish the war had not ended."

Meanwhile the introductory remarks of A. A. R. President Pelley had recalled that the railroads reported to the late President Roosevelt in May, 1939, that they could meet the rail transportation requirements of "almost any emergency." Mr. Pelley also recalled that Mr. Roosevelt had subsequently told him that "in case of a national emergency there would be no taking over of the railroads—we had our fill of that."

Mr. Roosevelt, as Mr. Pelley put it, "never wavered from this decision"; and, when he did take over for a period of 22 days at the time of 1943's year-end strike threat, "there was not the slightest disturbance in their operations—a better job could not have been done." Before coming to his tribute to Colonel Johnson, Mr. Pelley mentioned the war services of his predecessors—Ralph Budd, "one of the outstanding railroad executives," and the late Joseph B. Eastman, first director of O. D. T. and "a truly great transportation statesman."

The "Quarterback"

Upon the death of Mr. Eastman, Mr. Pelley said, Colonel Johnson "immediately fitted himself into the transportation team composed of the public, the shippers, government agencies, and all of the carriers. You might say he acted as quarterback of the team, calling the

signals, and all of the signals called were answered in the affirmative."

"Proof of the soundness of President Roosevelt's transportation policy is apparent," Mr. Pelley continued. "First of all we had adequate land transportation during the war, making it possible to win the war as it was won. The financial results were more than considerable. Freight rates were no higher at the end of this war than before war began, although during the first World War and immediately thereafter, freight rates were increased an average of about 60 per cent. During World War II, passenger rates were increased about three per cent, but at the end of the war they were lower than even before the first World War.

"Then there is the position of the federal treasury. In the years 1918 to 1920, the railroads paid into the federal treasury in income taxes \$146,000,000. During those years there was a deficit in government operation of \$1,600,000,000. During this war, from Pearl Harbor to the end of the war with Japan, the railroads paid into the federal treasury in income taxes \$4,235,000,000 and there was no deficit from government operation to be paid by the taxpayers.

Recalls Truman Tribute

"With the passing of President Roosevelt and the coming of President Truman, there was no change in the government transportation policy. President Truman, as Senator Truman, had a splendid opportunity to observe the operations of our transportation agencies during the war because, as chairman of the Truman committee, he headed an investigation into the transportation situation. His committee made an excellent report and in that report he used these words—'This is a job well done.'"

Mr. Pelley closed with a reading of the inscription on the scroll presented to

Colonel Johnson, saying that was the way he could best tell how the armed services and the railroads felt about the guest of honor. The A. A. R. president also said that Colonel Johnson, perhaps more than anyone else he had ever contacted, believed that "wars are won with good transportation and lost without it." It was in this spirit, he added, that the colonel handled his assignment as director of the O. D. T.

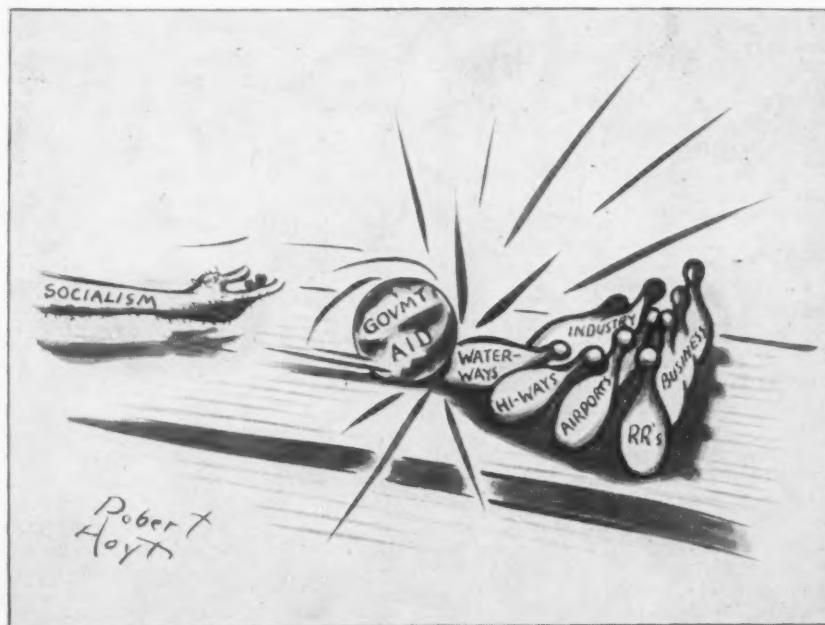
Representative Bulwinkle opened his address with a tribute to Colonel Johnson on behalf of the House committee on interstate and foreign commerce. "The nation," he said of the O. D. T. director, "is grateful to him for his magnificent efforts to aid in the transportation of materials of war and troops during the critical period through which we have passed."

Calls for Sound Legislating

The remainder of the congressman's address was largely a highlight review of the committee's history from the time of its organization in 1795 as the committee on commerce and manufactures. As Mr. Bulwinkle put it, it is "today the greatest legislative committee in the House of Representatives." In closing, however, he reminded his audience that "a tomorrow is coming."

"The future holds very heavy responsibilities and exceedingly hard work for each and every member of the committee," he added. "It is true that a great amount of the work deals with regulatory legislation which is very important to the country. It is also true that some of the work will deal with individual citizens of the nation. In times like these, of a necessity these types of legislation must increase; but be that as it may . . . the underlying principle of the legislation that will be reported out of the committee must have as its guide the words 'in the public interest.'"

A Strike?



September Purchases \$132,754,000

Material buying continues at fast pace but with slight recession in the third quarter

CLASS I railway purchases of materials, supplies and fuel, exclusive of equipment, during the month of September, amounted to \$132,754,000 and totaled \$1,187,635,000 for the first nine months of 1945, according to estimates prepared by *Railway Age*, based upon special reports from 79 individual carriers. The September amount was slightly less than that for the same month last year, three per cent greater than 1943, 34 per cent more than in 1942 and 24 per cent more than in 1941. Currently, while the September total showed a recession of two per cent compared with August figures, the daily purchase rate for September was slightly higher because of a 30-day month and the influence of Labor Day. September purchases also were marked by substantial increases in the receipt of crossties and rails and by a recession of five per cent in the buying of stores stock compared with the preceding month.

Nine Months' Expenditures

Total purchases for the first nine months of this year slipped two per cent below last year's \$1,217,261,000, but they exceeded those for the same period of 1943 by 17 per cent; they were 24 per cent more than similar purchases in 1942 and 42 per cent greater than at the end of the third quarter of 1941.

Total purchases for the third quarter amounted to \$402,206,000 or approximately one per cent below those of last year, but were 10 per cent more than 1943's third quarter, 34 per cent greater than those of the third quarter of 1942 and fully 30 per cent more than 1941's third quarter.

The total third quarter purchases for this year also surpassed those of the second quarter by one per cent and were four per cent greater than those of the first quarter.

Purchases of materials and supplies from manufacturers (exclusive of fuel) sagged two per cent below those of August and with that exception were greater than for any other month this year. Amounting to \$87,849,000, they were also two per cent less than those of September, 1944, but exceeded those of the same month in 1943 by six per cent, those of 1942 by 40 per cent and were 16 per cent greater than September, 1941.

Perceptible easing has been manifest in buying the large bulk of railway materials and supplies that for the most part comprise storehouse stocks. September receipts dropped five per cent below those of August, they approximated those of July, were three per cent less than those of September, 1944, eight per

cent more than for 1943, 36 per cent greater than 1942 and exceeded those of September, 1941, by 12 per cent.

Although purchase figures reflect a slight increase in the delivery of crossties, optimistic conclusions should be tempered by consideration of the O.P.A. price increase that went into effect on July 26, as well as the fact that, because of widespread publicity prior to that increase, thousands of crossties were held back in the woods for better prices. Consequently the railways spent \$7,233,000 for ties in September, seven per cent more than for August and 23 per cent more than for July and 15 per cent more than for June. September expenditures, however, were eight per cent less than for the same month last year, and 20 per cent under those of September, 1943; they exceeded those of 1942 by 41 per cent and were 66 per cent more than for September, 1941.

Reflecting the sharp cutbacks that were imposed by the War Production Board during the early part of the year, the railways received 12 per cent less rail in the first nine months of 1945 than they received for the same period of 1944; however, the \$49,808,000 expenditure for rail is 20 per cent greater than the comparable period of 1943, 17 per cent more than 1942 and topped 1941 purchases for the same nine months by 14 per cent. September, 1945, rail purchases exceed August by a full 29 per cent, July by ten per cent, June by 16 per cent and top the January purchases by 34 per cent. Total July, August and September purchases of rail top the first quarter total by 11 per cent and exceed the second quarter by a full 19 per cent.

Fuel deliveries for the month of September sagged two per cent below those for August, six per cent below July purchases, while they were eight per cent under the June total and seven per cent below January deliveries. September purchases amounted to \$44,905,000, which is two per cent more than the same month one year ago, but is two per cent less than for the same month in 1943; however, the September total exceeds the 1942 fuel purchases by 24 per cent and tops 1941 by 42 per cent. Third quarter purchases amounting to \$138,566,000 are two per cent less than the first quarter and dropped four per cent below the second quarter purchases in this category. Fuel purchases for the three quarter period aggregated \$424,425,000, which is five per cent less than the \$445,374,000 expenditure during the similar period last year, but tops 1943 by seven per cent, is 36 per cent greater than 1942 and exceeds the same nine month period in 1941 by 70 per cent.

The value of material and supplies carried in stock by Class I railroads amounted to \$605,103,000 on September 1, 1945, according to reports of the Interstate Commerce Commission. This total reflects very little change since the first of August; however, it is 14 per cent more than the January, 1944, balance and is one per cent greater than the September, 1944, total.

Fuel Stocks Lower

According to *Railway Age* estimates, fuel supplies in stock show a further decrease from the \$56,248,000 on hand August 1, 1945. The September total of \$55,333,000 is a decrease of two per cent and is seven per cent less than the January, 1945, balance, but it exceeds January, 1944, by ten per cent and is 18 per cent less than the fuel balance on September 1, 1944.

Crosstie inventories still reflect the serious lag in field production that has prevailed throughout the war years. The value of crossties in stock on September 1, 1945, amounted to \$62,070,000, which is the lowest value for any period since the beginning of 1944; it is 14 per cent less than the \$72,434,000 January balance, seven per cent less than the \$66,422,000 inventory on August 1, 1945, nine per cent less than the January 1, 1944, total and is 13 per cent less than the comparable month in 1944.

Rail in stock on September 1 totals \$25,611,000, a drop of three per cent below the \$26,332,000 balance on August 1, but is five per cent greater than January, 1945, balances, while topping both January and September, 1944, by a full 15 per cent.

Scrap inventories for September jumped to \$13,979,000 for an increase of 51 per cent over the August total, 38 per cent greater than the January, 1945, balance, while they top the January, 1944, inventories by 45 per cent and exceed the \$10,292,000 on hand during the same month in 1944 by 36 per cent.

C. P. R. RESORT HOTELS.—Anticipating an all-time high in tourist traffic, the Canadian Pacific's general manager of hotels, H. F. Mathews, has announced that all of the railroad's summer hotels, from the Atlantic Coast to the Rockies, will be reopened by June. The C. P. R. will reinstate also the all-expense tours in the Canadian Rockies, he added. Decision to reopen the hotels, closed since 1942 because of the war, resulted from the conviction that Canadian and American transportation companies would be able to cope with the large volume of traffic expected, as well as the promise of the availability of suitable staffs.

GENERAL NEWS

Wage Talks in Jam Over Rules Demands

Engine and train unions won't agree to take up one thing at a time

Wage increases and rule changes demanded by 20 railroad unions, which have been the subject of conferences in Chicago between employee and carrier representatives for more than two weeks, would add more than \$2,000,000,000 annually to railroad costs, the carriers' spokesmen estimated.

Little progress has been made thus far toward a settlement of the dispute, according to D. P. Loomis, chairman of the western carriers' conference committee; H. A. Enoch, chairman for the eastern carriers; and J. B. Parrish, chairman for the southeastern committee.

To Reduce Efficiency—Rule changes demanded by the operating brotherhoods, they said, "would destroy the efficiency of the railroads which was so dramatically demonstrated by the war and would wipe out the benefits of billions of dollars which have been invested in the railroad plant in the last two decades."

Payroll costs to the carriers for operating employees would be increased more than 100 per cent if all of the rule changes and wage increases became effective, they said. They compared the more than 2-billion-dollar wage and rule demands of the operating and non-operating employees with the railroads' net railway operating income of \$1,106,000,000 in 1944 when freight and passenger traffic was at an all-time peak; also with the railroads' total payroll last year of \$3,853,000,000.

Blocking progress toward a settlement of the wage issue, the carriers' conferees said, is the insistence of some of the operating brotherhoods on more than 50 changes in rules which alone would cost the carriers more than three-fourths of a billion dollars annually.

Train Limits Proposed—"The rules proposed by the brotherhoods," said the railroads' spokesmen, "range from demands for two-hours' pay for the employees' time in having their watches inspected, to arbitrarily limiting the length of freight trains to 70 cars and passenger trains to 14 cars. The rule changes sought are mostly in the 'featherbed' category, destructive of efficiency and deviously designed to produce more pay."

"The rule demands were made before the end of the war, while rigid wage stabilization regulations were in effect, and were admittedly intended to circumvent the government's inflation controls."

"These demands," the carriers' conferees continued, "are actually an additional wage case and cannot be considered apart from the general wage issue that is now before us. They only serve to cloud and delay consideration of the wage issue."

Countering the brotherhoods' demands, the carriers themselves proposed 29 rule changes which, they said, were intended "to eliminate penalty wages for services not performed, and to do away with obsolete rules which impede efficient and economic railway operation under modern transportation methods."

The conferees said that, "in order to expedite disposition of the wage issue we suggested to the 20 unions that all proposals relating to hours and rules, including our own proposals, be laid aside and the issues narrowed down to wage increases. We pointed out that it would take months of deliberation to cover the rules agenda."

"The 15 non-operating unions, which include shopmen, clerks, maintenance workers and other classifications of non-operating employees, converted their varying demands into a uniform request for a wage increase of 30 cents an hour.

"Three of the operating organizations—conductors, firemen and switchmen—agreed that wages were the paramount issue.

Two "Hold-Out" Unions—"The other two brotherhoods—trainmen and engineers—have maintained their intention of pressing both their wage and rules demands. Inasmuch as the rule changes demanded by these two affect members of the other operating unions, little headway has been made in the negotiations which are presently being conducted separately with the three groups of unions."

Since 1941 the basic pay of railroad employees has been increased twice, resulting in an added payroll cost to the carriers in 1944 of \$785,000,000, they said. Partially to offset the first increase in 1941 the Interstate Commerce Commission granted a 10 per cent increase in passenger fares and an increase averaging approximately 4.7 per cent in freight rates. The freight rate increase was suspended in 1943, after having been in force a little more than 14 months, and has not since been restored.

"The railroads since the first World War, have spent 12 billion dollars to increase the efficiency of their operations," these spokesmen said. "Locomotives of greater power, heavier rails, reduction of grade and track curvature and other improvements have been made to provide for faster, longer and more heavily loaded trains. The wisdom of this expenditure has been fully justified by the proved ability of the railroads to handle the unprecedented volume of war-time traffic."

The carriers' conferees said that "many (Continued on page 997)

Otis Sleeper Bid Is Justice Dept.'s Pick

Is won over by firm's promise to spend half billion on cars each decade

After three days of oral argument and rebuttal, the three judge court in Philadelphia undertook consideration of the disposition of the Pullman Company on Wednesday, December 12. It was not indicated when the court will hand down its decision.

Special Assistant Attorney General Holmes Baldridge, in a departure from the Department of Justice brief, came out in favor of Otis & Co. as the one of the four bidders which best met the anti-trust division's specifications for remedying the monopoly the court has found to exist in the sleeping car business. He reached this conclusion after eliminating all other bidders on the ground that sale to them would "perpetuate the monopoly" and constitute a violation of the Sherman Act.

Why RRs. Have Bought Cars—In his attack on the railroads as sleeping car operators, Mr. Baldridge stated that, under such a regime, there would be no competition in types of equipment, since the commonly owned operating company would be the only buyer. All three members of the court took exception to this statement, pointing out that the railroads proposed to purchase; and, according to their testimony, already had begun to purchase large amounts of sleepers individually. Mr. Baldridge, however, refused to be shaken from his statement; and, after considerable discussion, concluded that the sleeping car orders now placed by the individual railroads with various car builders were placed primarily to influence the court. He insisted that, if the railroads were to buy the Pullman Company, they would order their cars commonly and all from Pullman Standard. The cause of this, claimed Mr. Baldridge, would be the "momentum of 50 years of monopoly". He concluded his condemnation of the railroad offer by saying that cooperative ownership would constitute a violation of the Sherman Act, and that the small railroads would be dominated by the larger ones in the joint operation.

Mr. Baldridge eliminated Glore, Forgan from the running on the ground that it offered no control over the eventual disposition of Pullman stock; and Standard Steel Spring's claims were dismissed on an allegation of financial unsoundness, and "affiliations."

The government endorsement of the Otis offer was based primarily on its announced intention to spend a half a billion dollars on new sleepers every ten years, and engage in an aggressive promotional program

for Pullman travel. It, claimed Baldridge, was the only "firm" offer besides that of the railroads.

A Six-Months' Delay?—The court asked Pullman, Inc., whether Pullman service could be continued under the status quo for another six months, after existing contracts with the railroads expire on December 31, if delay in court proceedings should necessitate this expedient. Pullman's counsel, former Senator George Wharton Pepper, answered in the affirmative.

Senator Pepper representing Pullman, Inc., said that: "When I open the Otis brief, I am met with the flat assertion that a contract was made by itself with Pullman, Inc. . . . Far from being the acceptance [of the previously initiated Pullman request for bids] it is not even a proposal or offer which Pullman could have accepted. It is a polite invitation to negotiate, and nothing more." Senator Pepper concluded for this reason that Pullman had a contract with the railroads, and not Otis & Co., despite the fact that Otis had contacted the Pullman Company in reference to the proposed sale prior to the railroads. He maintained that it was not within the court's jurisdiction to pick and choose among the bidders; but that its duty was simply to decide whether or not sale to the railroads would perpetuate the monopoly which the court had undertaken to destroy. He also said that the previous history of the case stood clear on the point that Pullman had been operating in dis-service to the railroads, and that the rail-

roads had always been considered the most logical purchaser of the operating company.

Referring, in closing, to the subject of through sleeper service, repeatedly mentioned by the Otis interests, he said: "We have such trains as the 'Ambassador' and the 'Senator.' I very much hope that the rails will assure the court that they are going to run a through de luxe train called the 'Jurist' . . . and, if I may be permitted to do so, I shall take the old man's liberty of recommending to the rails the names of three judges of my acquaintance after each of whom a car on that train ought to be named."

"Banker Control"—Thurman Arnold, who instituted the original anti-trust proceedings against Pullman, Inc., and is now the attorney for the Otis interests, opened his argument with the observation that Senator Pepper was attempting to consider the anti-trust laws a "matter of formal logic" and had chosen an offer which would give his client "less manufacturing opportunity" than the Otis Company would. While the railroads were overcharged by Pullman, Mr. Arnold continued, they did not protest; and although they supported Pullman during the anti-trust trial, they are now attempting to use the fact that Pullman overcharged them as an argument in favor of their taking over the operating company.

It was the court's responsibility, Mr. Arnold said, to do more than engage in negative restriction; and to take the Pullman operating company out from under the

banker control which dominates both Pullman, Inc., and the railroads. He deprecated the bid of the Standard Steel Spring Company by saying that its claim to a non-interlocking directorate (as asserted in its brief), ignored its banker control; which, he contended was the same as that of both Pullman, Inc. and the railroads. It was from this non-competitive sphere, he insisted, that sale to the Otis group would remove the sleeper service. When asked what the Otis group should do in case the railroads refused its services, Mr. Arnold first conceded that it "would have made a very bad buy", but then considered the possibility of anti-trust proceedings or other measures to force the railroads to accept the service.

Promise of Large Outlays—He then argued that the promise of competition in sleeper service was a vital part of the Otis argument since this group would have to offer its proposed \$500-million-dollar fleet of sleepers at a price cheaper than the railroads could obtain the service elsewhere or provide it themselves.

Judge Maris asked Mr. Arnold if he thought Otis could enter the field without buying the Pullman Company, to which Mr. Arnold replied in the negative, with qualifications. When asked if Otis could carry on the service without receiving contracts prior to the purchase, Mr. Arnold replied that this would be a standard business risk. Judge Maris then asked how the court could be sure that Otis would make good on its proposals to invest \$500 million in the enterprise, and Mr. Arnold

Railway Labor Act a Model for Industrial Peace?

"Those who think most highly of the bill proposed by President Truman to establish 'fact-finding' boards as a means of settling labor disputes compare it constantly with the Railway Labor Act. The history of that act, however, is hardly such as to inspire confidence that another act modeled upon it would lead to impartial decisions followed by impartial enforcement.

Two illustrations are enough to show, by their contrast, the one-sided nature of the Railway Labor Act in practice.

"In December, 1941, just a few days before Pearl Harbor, a threatened nation-wide railway strike was bought off at a heavy price. Railway labor was able to show that the elaborate conciliation machinery set up under the Railway Labor Act was of little use except to make decisions in the unions' favor. The railway unions did not hesitate to reject a Presidential board award that they did not wholly like. They called a strike to win something better. Technically, the face of the board that had brought in the original report was saved. The President did not take the question out of the hands of the board: he referred it to them again. Technically, the board did not even have to change its first decision, for it became the sec-

ond time no longer a 'fact-finding' but a 'mediation' board.

"But these face-saving technicalities could not conceal the realities. In effect, the President told the board that it had brought in the wrong answer and must try again. . . . Governmental boards were put on notice that if they wanted to keep the appearance of prestige they had better bring in the first time a decision that the union leaders would like.

"Now let us look, in contrast, at the decision rendered by the Supreme Court in January, 1944, against the Toledo, Peoria & Western Railroad. A strike was called on the road, picket lines were formed, violence broke out, the railway service was interrupted and the company's property damaged. The railroad applied to the District Court for an injunction to restrain the strikers from interfering by violence with its property and interstate operations. The Supreme Court held that the road was not entitled to this legal protection. The ground of the court's decision was that the railroad did not make 'every reasonable effort' (the court's italics) as required by the Norris-La Guardia Act. The court admitted that the railroad had 'recognized the employee's designated representatives, negotiated with them, engaged in mediation until it was terminated by the board as [the Railway

Labor Act] required.' The court also conceded that the railroad had urged the appointment of an emergency board under the Railway Labor Act. But the court condemned the railroad because 'when it came, however, to the final crucial step of arbitration, it declined to go forward.'

"Now the Railway Labor Act itself does not make arbitration compulsory. It specifically provides that 'the failure or refusal of either party to submit a controversy to arbitration shall not be construed as a violation of any legal obligation imposed upon such party by the terms of this act or otherwise.' Yet if a railroad refuses the 'voluntary' arbitration under the Railway Labor Act, the Supreme Court has ruled in effect that strikers may thereupon proceed with destruction of property, sabotage and violence without the restraint of any injunctive protection for the road. . . . If this does not in fact turn the alleged 'voluntary' arbitration under the Railway Labor Act into compulsory arbitration so far as the railroads are concerned, it is hard to say what it does do.

"The 'fact-finding' bill now before Congress, which is modeled on the Railway Labor Act, must be judged in the light of the 1941 incident and of the Supreme Court's decision on the Toledo, Peoria & Western Railroad."

—From the New York Times

suggested the possibility of contempt of court proceedings.

Leo Tierney, attorney for Glore, Forgan, in his argument emphasized the financial soundness of the firm, which has proposed the sale of Pullman stock to the public. He also pointed out that all persons with an interest in either Pullman, Inc., or the railroads would be excluded from the initial purchase of securities.

Standard Steel Spring's counsel, Lewis Stevens, recommended his company on its record as an aggressive producer in the competitive automobile equipment field, and reiterated its promise to supply lightweight cars to even the small railroads if they had sufficient need of such equipment to warrant the investment.

At the opening of the argument for the railroad group which proposes to purchase the sleeping car business, Jacob Aronson, vice-president of the New York Central, announced that 96 per cent of the railroads utilizing Pullman service were now members of his group, and he pointed out that, of the remainder, all but two were either under control of R. R. Young or had indicated their intention to join the railroad bidders.

Justice Dept. Changes Its Views— Mr. Aronson quoted both the oral testimony and the brief of the Department of Justice in its original anti-trust suit to show that, at that time, there had been little or no consideration of sale of the operating company to any interest other than the railroads, despite claims to the contrary in the Justice Department's latest brief. He maintained that the railroad plan (which calls for common operation of Pullman for a maximum of three years, during which time regularly assigned equipment would be bought by the railroads, with subsequent sale of the "floating" pool to an independent operator) would involve less "clubbing together" than any other plan offered, and would set up 58 independent equipment purchasers (the 57 railroads, as well as the eventual purchaser of the floating pool).

Mr. Aronson added that this proposal would provide sharp competition in types of equipment, in contrast to Otis & Co.'s plans—which, he said, would tend, not only to "freeze" types of equipment (one of the major complaints against the past conduct of the sleeping car business) but would tend to center production in one, mass-producing manufacturer. He further contended that the Otis plan to use new equipment exclusively, even where operation was sporadic and seasonal, was ridiculous, since this equipment could not possibly earn its way.

In closing, Mr. Aronson disposed of the complaint of interlocking directors between the railroads and Pullman, Inc., with an announcement that all such directors, except one, had resigned their directorates and disposed of their holdings in one field or the other, and that this one had indicated his willingness to follow suit if the court deemed it necessary.

Threat of Continued Court Control —John Dickinson, general counsel of the Pennsylvania, continued the railroad statement, arguing that sale of all sleeping car equipment to an outsider would put him in a dominant position over the railroads.

This would force the court to assume broad administrative powers over this outsider to police his assumption of power. In this reference he quoted the respective briefs to show that both the Standard Steel Spring Company and the Otis group had indicated a desire to obtain contracts with restrictions on acquisition of cars by the railroads, minimum tariffs, or denial of right of cancellation of contracts.

Judge Biggs interrupted Mr. Dickinson to ask him what plans the railroads had made for expansion and replacement of sleeper equipment. Mr. Dickinson replied that both the Pennsylvania and the New York Central had placed sleeper orders with various manufacturers valued at approximately \$20 million each; this seemed to indicate that the railroads had no intention of operating on the pre-war equipment of the Pullman Company.

It was urged by Mr. Dickinson that Pullman employees would be in a better position under railroad management, than under an outsider; since they would be dealing with a group experienced with labor problems under the Railway Labor Act, to which Pullman employees are subject. He added that the railroad plan would make the company much more reliable financially, and thus add to the job security of its employees.

Paul W. Knox, speaking for the Pullman Company's employees, said they would not oppose any of the bidders as all four had promised to maintain existing labor relations.

Boston & Maine Hails Return of the "Snow Trains"

The Boston & Maine has issued a 32-page two-color illustrated booklet announcing the return of snow trains, "Just as soon as there is sufficient snow." Inactive since the war necessitated their suspension two years ago, these trains now look forward to their 13th seasonal operation. The booklet, entitled "Snow Trains," contains all necessary information for newcomers and sports veterans alike, including rates and schedules for Sunday and week-end trips from Boston to various winter sport regions in New England. Hotels and inns are listed as well.

Copies of the booklet may be had, postpaid, by addressing D. W. Bishop, advertising agent, Boston & Maine, North Station, Boston.

Railway Express Agency Cited by Navy for War Work

Upon recommendations of the chiefs of various Navy divisions in charge of shipping activities during the war, the United States Navy has awarded a "certificate of achievement" to the Railway Express Agency. The citation, which was announced by L. O. Head, president of the company, was given for "exceptional accomplishment and meritorious contribution to the war effort."

Mr. Head disclosed that to meet the war emergency, soon after Pearl Harbor, the company established a separate bureau in Washington, D. C., placed express representatives in all naval bases or made them quickly available to the officers in charge, and expedited shipments generally in all large express terminals. In 1944, he said,

express moving on government bills-of-lading was 55 times as much as in 1940, and war traffic reached 70 per cent of the total handled by the Agency. Eighty per cent of the traffic in air express service, he added, was directly connected with the war effort, with naval shipments representing a substantial part of the total.

L. C. L. Traffic in Northwest Increased by Truck Strike

A strike of over-the-road truckers in the states of Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota, which has been called by the International Brotherhood of Teamsters, has resulted in large increase in railroad l.c.l. traffic in these states.

Coming on top of general shortages of skilled warehouse labor, the increased movement of l.c.l. has led to serious congestion at many important midwestern centers. The first points at which the congestion became acute were Minneapolis, Minn., St. Paul and Minnesota Transfer, all of which were placed under an embargo applying against l.c.l. freight on November 24, and remaining in effect until November 30.

On December 5, similar embargoes were placed against l.c.l. freight destined Burlington, Iowa, and Council Bluffs; Omaha, Neb., and South Omaha, which are still in effect. On that same day the Interstate Commerce Commission issued Service Order No. 391, prohibiting until December 10, the acceptance of outbound l.c.l. shipments at Omaha, South Omaha and Council Bluffs, and Service Order No. 392, prohibiting until January 4, 1946, the acceptance at Kansas City, Mo.-Kan., of similar shipments on Mondays and Wednesdays.

Railroad estimates of the increased l.c.l. movement resulting from the strike range from "very little" on some roads to "more than 100 per cent" on others.

The Denver & Rio Grande Western likewise found it necessary, effective December 8, to place a general embargo on all l.c.l. freight to and from Denver, Colo., due to labor trouble. Exception was made to provide acceptance of outbound l.c.l. handled in trap cars.

C. N. J. Officer Sees No Early Relief for Commuter Standees

Following the latest Office of Defense Transportation order to the Jersey Central requiring it to send 10 more of its all-steel passenger coaches to Seattle, Wash., to aid in relieving the critical transportation situation on the West Coast, E. T. Moore, general manager of the Central Railroad of New Jersey, has announced that the C. N. J. will be further hampered in its efforts to provide seats for all passengers on its lines in New Jersey and Pennsylvania during commuter rush hours.

"At present, we are 14 cars short of the number needed daily to eliminate all standees during commuter hours," Mr. Moore said, disclosing that on days when troop movements are heavy between Jersey City and Camp Kilmer, the shortage reaches 50 cars. During November, he added, 76,326 troops returning from Europe for discharge at Camp Kilmer were transported by the C. N. J. from Jersey City to the army camp, as compared with 45,365 in

October, 43,734 in September, and 43,326 in August.

Anticipating an increasingly heavy movement of soldiers throughout December and January, Mr. Moore said that prior to the latest O. D. T. order, the C. N. J. ran 394 coaches daily on its lines, with the number for civilians being determined by army needs.

Freight Car Loadings

Loadings of revenue freight for the week ended December 8, totaled 776,375 cars, the Association of American Railroads announced on December 13. This was a decrease of 27,395 cars or 3.4 per cent below the preceding week, a decrease of 16,781 cars or 2.1 per cent below the corresponding week last year, and a decrease of 46,936 cars or 5.7 per cent below the comparable 1943 week.

Loading of revenue freight for the week ended December 1 totaled 803,770 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading			
For the Week Ended Saturday, December 1			
District	1945	1944	1943
Eastern	151,598	157,061	165,129
Allegheny	168,181	177,328	184,475
Pocahontas	56,326	52,463	58,929
Southern	128,399	120,660	127,251
Northwestern	94,544	89,409	113,538
Central Western	136,484	135,794	135,233
Southwestern	68,238	75,121	78,188
Total Western Districts	299,266	300,324	326,949
Total All Roads	803,770	807,836	862,733
Commodities			
Grain and grain products	58,810	47,694	56,351
Live stock	25,064	22,630	19,750
Coal	179,764	169,231	185,816
Coke	13,504	13,381	15,155
Forest products	33,021	38,727	46,044
Ore	14,767	13,589	40,743
Merchandise l.c.l.	116,897	106,033	105,958
Miscellaneous	361,943	396,551	392,916
December 1	803,770	807,836	862,733
November 24	716,494	768,338	819,832
November 17	800,361	863,992	882,287
November 10	838,218	839,504	847,972
November 3	851,962	893,069	754,739
Cumulative Total,			
48 Weeks	39,158,631	40,517,049	39,573,279

IN CANADA.—Carloadings for the week ended December 1 totaled 73,296, as compared with 72,644 for the previous week, and 72,526 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
Dec. 1, 1945	73,296	35,084
Dec. 2, 1944	72,526	38,024
Cumulative Totals for Canada:		
Dec. 1, 1945	3,364,834	1,679,078
Dec. 2, 1944	3,410,335	1,847,789

Committee Formed to Consider New Chicago Railway Terminal

Headed by Fred G. Gurley, president of the Atchison, Topeka & Santa Fe, a committee of high officers of seven important railroads entering the Loop area of Chicago from the south, has been formed for the purpose of selecting the best possible site for a proposed new south-side terminal for use of roads now terminating at the Illinois Central, Dearborn, Grand Central and La Salle Street stations.

In a letter to Mayor Kelly of Chicago, Mr. Gurley explained that a previous sur-

vey had eliminated Chicago's Union and North Western stations from consideration as terminal possibilities for the seven roads in question. At the same time Mr. Gurley said that the committee will employ a full-time secretary and will conduct a thorough study of the situation before choosing a site for the new terminal.

Other members of the committee of which Mr. Gurley is chairman, are: J. D. Farrington, chief executive officer of the Chicago, Rock Island & Pacific; Wayne A. Johnston, president of the Illinois Central; H. B. Voorhees, president of the Baltimore & Ohio Chicago Terminal; Gustav Metzman, president of the New York Central; M. F. Stokes, president of the Chicago & Western Indiana; and Holly Stover, president of the Chicago & Eastern Illinois.

Santa Fe Inaugurates Freight Service into Long Beach

Following authorization by the Interstate Commerce Commission and the completion of the necessary work in connection with the project, the Atchison, Topeka & Santa Fe on December 15 began freight operations to and from Long Beach, Cal. At the same time, the railroad announced that it had opened a team track and a freight station between Seventh and Eighth streets west of Pico street to coincide with the inauguration of the new service.

As reported in the *Railway Age* of October 20, the Santa Fe makes its entry into the city and port area of Long Beach by acquiring trackage rights over 1.96 miles of line owned by the Southern Pacific and 4.29 miles owned by the Pacific Electric, thereby securing a connection from its

own tracks in the Wilmington section of Los Angeles to the adjacent waterfront of Long Beach. In addition, the rights already enjoyed by other roads to operate over municipal tracks serving the harbor area have been extended to the Santa Fe as a part of the arrangement to provide it with a means of access to the port without building its own line.

Western Lines Produce New Record Grain Movement

The box-car supply in the West, particularly with respect to the movement of grain, remains tight, although there has been some improvement, according to R. E. Clark, manager of the Closed Car Section of the Association of American Railroads. During the first 48 weeks of 1945, 2,540,260 cars of grain and grain products, an all-time high, were moved by United States railroads, as compared with 2,349,704 cars in the corresponding period of 1944, and 2,463,925 cars in 1943, the previous peak year.

As of December 1, according to Mr. Clark, there were 276 grain elevators closed for lack of cars, and figures for the week ending December 8 were expected to show a reduction in the number of blocked elevators to about 250. It was also estimated that there are about 40,000 bushels of grain, largely sorghums, on the ground at stations in the Southwest, but there were no reports of such conditions in the Northwest. Also reported are approximately one million bushels of grain on the ground on farms in the Southwest, with no estimate available for the Northwest. Mr. Clark pointed out, however, that this did not represent grain that was being held back solely because of car shortages.

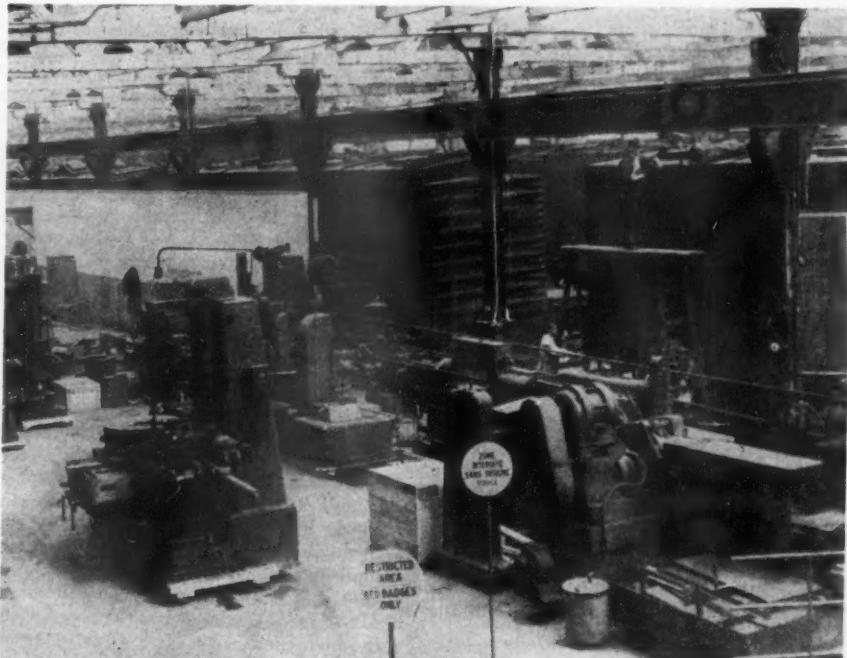


Photo Courtesy C. P. R.

Freight Cars Displace Munition Machinery

The Angus Shops of the Canadian Pacific in Montreal, which, without enlargement, turned out some \$116,000,000 in munitions during the war, and at the same time increased output of major railway repairs jobs from pre-war years, are now preparing for peace-time repairs, with freight cars crowding precision machinery out of the picture.

It is his belief that much is being held due to shortages of farm labor, trucks and tires, as well as other conditions that normally retain large volumes of grain in farm storage.

In spite of a tight box-car supply in the East and South, roads serving this territory are returning to western lines an average of 1,148 empty box cars per day and have been doing so since November 1. As of December 8, these lines had delivered 5,800 more empties to Western lines than the Car Service Division quota of 930 empty box cars daily required. As of December 1, Mr. Clark estimated that there were about 7,500 fewer Western lines box cars on Eastern roads than there were on November 1. In spite of the heavy westbound empty movement and continued high level of eastbound loadings from the West which made it impossible to secure fully the desired reduction during November of 10,000 Western box cars on Eastern lines, over half of the entire Western lines box car ownership was located in the West on December 1, he revealed.

On the Pacific coast the supply of empty box cars also remains tight, particularly in the Pacific Northwest. This area is being supplied with empties both from California and from the East. Empty cars released from the Los Angeles area are also being used to augment the supply of cars available in the Southwest. Mr. Clark revealed that occasional delays to empty equipment were encountered in the West due to the movement of vast numbers of returning troops, which frequently has utilized all of the available power to the exclusion of empty car movements.

Wage Talks in Jam Over Rules Demands

(Continued from page 993)

of the demands of the unions are definitely in the 'feather-bedding' category—pay for doing nothing—and are of such character that they are contrary to American concepts.

7 Days' Pay for 1 Day's Work—
One of the most absurd proposals relates to the operation of four-unit Diesel freight locomotives, under which railroads using this equipment would be required to give four days' pay to members of the one crew operating the train and an additional three days' pay to standby crews, not used, or a total of seven days' pay for one day's work."

A number of the demands call for payment of an additional day's pay if certain duties are performed in connection with the regular day's work, they said. As examples of how 'feather-bedding' works, they cited the following:

"If a freight train stopped while a section crew unloaded a carload of ties, the train crew, under terms of the demand, would get an additional day's pay at the rate paid a work train crew. The same rule would apply in event a train was stopped to aid in a derailment or in construction service, even though it were only for a matter of minutes. If a train were to lap back, make a side trip to pick up a freight car or double a train over a hill,

the crew demands an additional day of pay instead of payment for the actual additional mileage or time. Engineers and trainmen want an additional day's pay for any service performed after arrival at the terminal, even though they have been on duty less than eight hours and their mileage is less than the mileage agreement."

Paying Twice for Employees' Time
—"It certainly does not make sense," the conferees said, "for these employees to demand a full day's pay for performing a duty within the hours of employment and within mileage limitations for which they already are being paid.

"Yard crews demand an additional day's pay as overtime for any new task performed after having been on duty eight hours."

The carriers' spokesmen said that "in the days ahead when railroads must anticipate keen competition from highway, waterway and other forms of subsidized competition, it is exceedingly short-sighted on the part of brotherhood officials to attempt to fasten needless expense on the public."

Petition Asks Combined Mop and C. & O. Coast-to-Coast Service

Immediate establishment of through transcontinental passenger service via St. Louis by the Missouri Pacific in conjunction with the Chesapeake & Ohio and other eastern roads was demanded in a petition filed in the United States district court by the Alleghany Corporation. The petition was filed before Federal Judge George H. Moore at St. Louis, Mo., by the corporation, which controls the C. & O., and seeks to establish the through traffic in place of the present system whereby passenger traffic interchanges at Chicago, St. Louis, New Orleans, La., and Memphis, Tenn.

Details of the proposed set-up, such as exact routes and eastern and western terminals were not embodied in the petition. Likewise it did not specify whether or not the service would include through train movements or only through Pullman cars.

As soon as it was presented by David J. Tompkins for the corporation the petition was entered as part of the reorganization proceedings of the Missouri Pacific, which are at the present time being held under advisement by Judge Moore.

L. N. E. R. Reports Traveler Quiz an "Unqualified Success"

Some 17,000 replies have been received to the London & North Eastern's coach design survey (*Railway Age*, October 13, page 611), and the company pronounces its quiz of British travelers an "unqualified success." This is believed to be the first such survey ever to be attempted on British railroads.

A leading question in the "Design for Comfort" booklet, in which passengers recorded their opinions, concerned possible preference for coach or compartment travel. Replies revealed that 40 per cent preferred coaches, 58.2 per cent compartment-type cars, and 1.8 per cent were indifferent.

There was considerable favor for wider and deeper windows and heavy votes for individual lighting control, provision of both large and small baggage racks, and the use of restful colors for car interiors.

Opinion was sharply divided on the desirability of "women only" compartments; 46.1 per cent favored the idea, 47.9 per cent thought them unnecessary and 6 per cent registered indifference. Further analysis of the group favoring "women only" compartments disclosed men outnumbered women by more than 2 to 1.

Suggestions were also solicited, and more than 20 per cent of those offered related to the introduction of better ventilation and heating, improved toilet accommodations and provisions for the sale of newspapers, magazines, fruit, tobacco, etc., on all long-distance trains. Other suggestions dealt with the installation of a public address system on long-distance trains to announce stations and meals, while there were some opinions on seat design, and provision of nurseries and similar accommodations for care of children.

All suggestions "are being carefully considered" by the railway, it is revealed.

Two U. P. Schedules Reduced

The Union Pacific has announced reductions in two important train schedules between Salt Lake City, Utah, and Los Angeles, Cal., as follows: The Los Angeles Limited, westbound, will leave Salt Lake City at 10:00 a.m., 15 minutes earlier than heretofore, and will arrive at Los Angeles at 8:30 a.m. the next morning, one hour earlier than on the previous schedule. The Pacific Limited No. 24, eastbound, now leaves Los Angeles at 8:00 a.m., one-half hour later than before. There is no change in this train's arrival time of 9:00 a.m. at Salt Lake City.

Wm. White Foresees Increases in Freight Rates

Addressing bankers of western New York and northern Pennsylvania at Buffalo, N. Y., last week, William White, president of the Lackawanna, said that if the railroads are to serve the nation as efficiently and economically during the era of reconstruction and peace as during the war, it is imperative that freight rates be increased; that the roads be afforded equality of opportunity in competition with other transportation services; and that existing rate-making procedure be preserved.

He protested against huge subsidies in the form of cost free and tax free facilities for competitive transportation services, while the privately built railroad industry pays a federal tax bill of \$4,500,000 a day.

Stating that railroad wages had increased 28 per cent and material prices 25 per cent since 1940, while revenue per ton-mile was still the same as in 1933, Mr. White said:

"The only thing that has enabled the railroads to make a reasonable profit during the war, with the increased burden of cost and no increase in freight charges, has been the tremendous volume of freight and passengers. With decreased volume of freight business and increased wage and material costs, an increase in freight rates is inevitable."

Mr. White cited the suit of the Department of Justice, at Lincoln, Neb., under the Sherman Anti-Trust Act, aimed at breaking up rate-making procedures existing over a long period of years under the regulation of the Interstate Commerce Commission.

"Under these procedures," he said, "industry can locate its plants with confidence as to the stability of freight rates and transportation costs. So far as we know, the shippers of this country who pay the freight are unanimously in favor of continuing the present procedures."

If the Lincoln suit were to set aside the rate-making procedure, Mr. White said "there would be chaos." He urged passage of the Bulwinkle Bill, H. R. 2536, pending in Congress, which, he said, "would clarify the law by preserving and protecting the Interstate Commerce Commission as the exclusive federal regulatory body."

As to aviation, Mr. White said, "there is some belief that the railroads are trying to restrict the development of airline transportation, and there are some people in the air transportation business who are trying to cultivate this myth in the public mind. A few weeks ago a high executive of an airline, in a speech at Chicago, charged the railroads with seeking to 'shackle aviation with restrictive legislation.' Nothing is further from the truth, and nothing would be more impossible. We are not 'babes in the woods.' We know that airline transportation is here to stay. We believe in it, and we believe further that the present restrictions which arbitrarily bar the railroads from opportunity to participate in its greater development and usefulness should be removed, also that railroads should be allowed the same opportunities in this field as other interests."

Another 1,000 Coaches Assigned to Troop Movement

Representatives of the traffic and operating departments of western railroads met in Chicago on December 11, with Army, Navy, Marine and Coast Guard men and with staff members of the Association of American Railroads and the Office of Defense Transportation to discuss plans for meeting the increasingly heavy movement of returning service men via West Coast ports.

In a statement following the meeting, C. H. Buford, vice-president operations and maintenance department, A.A.R., revealed that during December the railroads expected to handle a total of about 660,000 returning veterans via Pacific ports. This, combined with another 350,000 men arriving at other ports and the internal movement of an additional 250,000 service men, will bring the month's total troop movements to approximately a million and a quarter men. In addition, the air lines are expected to move another 25 to 30 thousand men each month from the West Coast to eastern seaboard points. Mr. Buford was unable to foresee any relief until after January, when the movement of service men via Atlantic ports will have been completed. Heavy movement through the West Coast is expected to continue through June, he added.

In addition to the transporting of military groups, the nation's railroads will be required to move at various times between December 16, and the end of the month, 12 special trains of Mexican citizens who are to be returned to their country following termination of their work in the United States, and several thousand students who

will desire to return to their homes for the Christmas holidays. Summing up the passenger situation briefly, Mr. Buford declared, "The balance of December will be the most critical period of the entire war for passenger movement."

In discussing the rapid return of service personnel through the West Coast ports, Mr. Buford revealed that on the night of December 10 there were at Pacific ports awaiting rail transportation eastward, 13,292 service men and that on that date a total of 17,683 men had been dispatched in eastbound movement. Currently, he said, the railroads were about 24 hr. behind in the movement of men from the Western ports of embarkation.

New schedules for arrivals of returning troops call for the movement of an average of 22,000 men requiring from 40 to 50 trains daily from West Coast ports, considerably in excess of the present averages. To accomplish this it has been decided to allocate immediately an additional 1,000 passenger coaches to the West Coast movement, the additional coaches representing a further decrease of 14 per cent in the number of coach seats available to civilian and military furlough travel on regular trains. When these coaches have been withdrawn there will be a total of approximately 3,500 all-steel, electrically lighted coaches, or 35 per cent of the total of such cars on United States railroads, assigned exclusively to troop movement. For the traffic from the West Coast, it is proposed to operate 400 sleeping cars carrying 12,000 men and 200 day coaches handling 10,000 men daily.

A check of trains leaving Pacific coast cities on December 5, 6 and 7, Mr. Buford revealed, showed that slightly more than 90 per cent of all Pullman and coach space was occupied by service men, leaving only 10 per cent for emergency civilian travel. He also said that about 85 per cent of all troops arriving at West Coast ports are destined to points east of the Mississippi river.

In response to a question concerning the possibility of securing additional sleepers for troop movement, Mr. Buford said that the armed forces already have the exclusive use of 75 per cent of the nation's sleeping cars, plus space commitments ranging up to 50 per cent on the regular car lines still operating. Additional troop sleepers are now being placed in service at the rate of 50 a week, with an increase to 60 cars a week expected within the next 10 days. The entire order of 1,200 troop sleepers is scheduled for completion by March and will be of considerable assistance in supplying sleeping car service to long-haul military travelers. In order to keep troop train interiors at comfortable temperatures during the winter months, he revealed, it is planned to cut down on train lengths, even though such a procedure will require the operation of more trains.

Court Decides Pullman-Standard May Sue for Libel

On February 5, 1944, the local magazine, "The Keel," of the United Steel Workers of America, a C. I. O. union, published an attack on Pullman-Standard Car & Manufacturing Co., impugning the patri-

otism of that company. Pullman-Standard sued for libel against the editors of the publication and the union, but Judge Igoe in the United States district court decided that the individuals and the union were not suable. Pullman-Standard thereupon took its case before the United States circuit court of appeals, and, in a precedent-making decision, a three-judge panel decided unanimously that the individuals responsible for the printed attack were suable for libel, while one of the judges also stated that the union, even though an unincorporated body, was also suable for libel.

Club Meetings

The Car Department Association of St. Louis (Mo.) will meet at 8 p.m., December 18, at the Hotel DeSoto, St. Louis. This will be the annual Christmas party, entertainment and election of officers for 1946. Following a 5:30 p.m. social period, there will be a 6:30 dinner.

The Traffic Club of Pittsburgh has announced that its annual dinner, scheduled for January 24, 1946, has been postponed. It will be held in the William Penn hotel, in that city, on April 30.

T. P. & W. Closes 21 Traffic Offices as Strike Continues

George P. McNear, Jr., president of the strike-bound Toledo, Peoria & Western, has ordered 21 traffic offices closed, notices of vacating given to landlords and all office furnishings offered for sale. The offices receiving the new order are located as follows: Chicago; New York; Washington, D. C.; Pittsburgh, Pa.; Cleveland, Ohio; Cincinnati, Ohio; Detroit, Mich.; Indianapolis, Ind.; Birmingham, Ala.; Memphis, Tenn.; Keokuk, Iowa; Minneapolis, Minn.; Omaha, Neb.; Tulsa, Okla.; Wichita, Kan.; Kansas City, Mo.; Denver, Colo.; Seattle, Wash.; Portland, Ore.; San Francisco, Cal., and Los Angeles.

Reached at his office in Peoria, Ill., Mr. McNear explained that he had been obliged to give the closing order because "it appears that it will be a long time before we are able to resume operations." He said in part:

"With the unions refusing to arbitrate regardless of the method of arbitration offered, it now appears that it will be a long time before we can again make use of our properties and the off-line agencies. We have offered to try to reach a settlement with the unions by arbitration, emergency board methods and other forms of negotiations, but all our efforts have failed. And under these circumstances we cannot see much prospect of getting anything done."

Mr. McNear declared that, even if the strike were settled immediately there would still be considerable delay in resuming operations due to the fact that the refusal of union officers to permit anyone to approach the property of the road has resulted in such deterioration of equipment, machinery and the road that it may take months before the railroad can be brought back to normal conditions.

The 239-mile railway has been idle since October 1 when federal management of the road ended and Mr. McNear took over.

With the Government Agencies

Bulwinkle Measure Is Passed by House

Following warm debate, bill receives 277-to-45 vote; no change in wording

After several hours debate, the House on December 10, by a 277-to-45 vote, passed the Bulwinkle bill to exempt joint action of carriers in making rate or other agreements, under Interstate Commerce Commission regulation, from the conspiracy and price-fixing provisions of the anti-trust laws. No change was effected in the wording of the bill recommended by the House committee on interstate and foreign commerce, which, as noted in *Railway Age* of November 24, page 874, modified the original language of H. R. 2536 to incorporate certain amendments proposed by the National Industrial Traffic League.

Opposition to the measure was expressed principally by congressmen from the South, including Representatives Russell and Gossett of Texas, and Tarver of Georgia, all Democrats, who based their objections to it primarily on the belief that its effect, if passed, would be to render moot the pending "conspiracy" suits of the state of Georgia against the Pennsylvania and other railroads and of the Department of Justice against a group of western railroads, individuals and associations. The one member of the committee that reported the bill who voted against it, Representative O'Hara, Republican of Minnesota, described its "ultimate purpose" as "to bail out the railroads who have been sued," while Mr. Gossett told the House that the Association of American Railroads had "spent millions to get this bill passed." The Bulwinkle bill, he declared, "decreases rather than increases the protection to which the people are entitled from gigantic monopoly and domination in the transportation field by the Association of American Railroads."

Speakers urging passage of the bill, and explaining its provisions, included its sponsor, Representative Bulwinkle of North Carolina, and Representatives Slaughter of Missouri and Patrick of Alabama, Democrats, and Holmes of Massachusetts and Wolverton of New Jersey, Republicans, among others. In the words of Mr. Patrick, the purpose of the bill is to remove legal handicaps, if they exist, so that necessary shipping agreements can be made without technically violating the anti-trust laws. "We have come to the point where we must pass this legislation sooner or later or we will be face to face with an impossible situation," he said. "What is the use of waiting until the lawsuits now pending are resolved? We cannot know how long that may take. If this law had been passed in time, we would not have these lawsuits in the country today. We do not pass laws

Land-Grant Repealer Signed by President

President Truman on December 12 signed the recently-enacted Boren bill which repeals remaining provisions of the land-grant-rate law, effective October 1, 1946. As noted in the *Railway Age* of December 8, page 950, Congressional action on the measure was completed November 30 when the House adopted the revised conference report which had been approved by the Senate on November 20.

to have lawsuits, and we should not withhold this legislation just to protect the growth of lawsuits."

In the course of the discussion, Representative Tarver placed in the Congressional Record a telegram he had received from Governor Arnall of Georgia, referring to the Bulwinkle bill, which commented that the "people of Georgia" are "completely disgusted with the I. C. C., which is clearly a tool of the railroads. Its domination by them is now recognized by every schoolboy." The commission, said the governor, in recommending the Bulwinkle bill for passage, "continues to play politics in its efforts to protect the railroads in charging discriminatory and unfair freight rates."

Fined for Violation of I. C. C. Explosives Regulations

According to a December 6 notice from Secretary W. P. Bartel, the Interstate Commerce Commission has been advised that on November 13 a plea of guilty was entered on behalf of the Southern in the federal court at Asheville, N. C., upon an information in two counts charging infractions of the commission's regulations governing the transportation of explosives and other dangerous articles. A fine of \$400 was imposed and paid.

The case was prepared for prosecution by the commission's Bureau of Inquiry after an investigation by the Bureau of Service. The specific offenses charged in the information were improper placing of loaded freight cars placarded "explosives" in a train next to cars placarded "dangerous."

I. C. C. Drops Investigation of Storage Practices

The Interstate Commerce Commission has discontinued the No. 28420 proceeding which it instituted in February, 1940, to investigate warehousing and storage rates, charges, rules, regulations, and practices of railroads at various Atlantic ports. The discontinuing order of December 3 stated that the charges at other ports involved have been revised since the commission issued its April, 1943, report on the situation at Baltimore, Md.

Name Barnard I. C. C. Chairman for 1946

Junior member of commission gets post Johnson is unable to accept

Through a notice issued by the Secretary W. P. Bartel, the Interstate Commerce Commission on December 11 announced that Commissioner George M. Barnard has been elected as its chairman for the calendar year 1946, succeeding John L. Rogers, whose stated term as chairman expires with the present year, though he of course continues his duties as commissioner. Since the chairmanship for a one-year period ordinarily goes in rotation to the different commissioners in order of seniority, Commissioner J. Monroe Johnson was next in line for the position, but as reported in *Railway Age* last week, he felt that his duties as director of the Office of Defense Transportation were such at this time as to make it impossible for him to take on the additional work attached to the chairmanship of the commission.

Thus the most recently appointed member of the commission succeeds to the chairman's post, as Mr. Barnard's appointment was confirmed by the Senate on November 29, 1944, following his selection by the late President Roosevelt for the vacancy on the commission created by the death of Joseph B. Eastman. While there was no particular expression of opposition to his appointment, confirmation was delayed for several months, first by Mr. Barnard's inability to appear before the Senate committee on interstate commerce due to injuries suffered in an automobile accident, and later by an extended Congressional recess and the diversion of interest to the political campaign then in progress.

Mr. Barnard is a Republican. He was born in 1881 at New Castle, Ind., and received his law degree at the University of Michigan in 1903. He then entered the practice of law in his native city, continuing there until 1921, but meanwhile serving two 2-year terms as prosecuting attorney of Henry county, Ind., and for the period 1910-1914 as mayor of New Castle.

In 1921, Mr. Barnard was first appointed to the Indiana Public Service Commission for a 4-year term, but he resigned a year later to resume the practice of law, this time at Indianapolis, where his partners were the late United States Senators Samuel M. Ralston and Frederick Van Nuyts. He was again appointed to the Indiana commission in 1941, and reappointed in 1943, giving up the latter after his selection for the I. C. C. vacancy expiring December 31, 1950.

Rules Tightened on Use of "Reefers"

Super-demurrage is reinstated;
I. C. C. service orders
fix restrictions

In order to make the most efficient use of refrigerator cars in the present critical shortage of this type of equipment, and on recommendation of the Refrigerator Car Lines Advisory Committee, the Interstate Commerce Commission has instituted super-demurrage charges and the Office of Defense Transportation has increased certain minimum loading requirements applicable to such cars. The short supply of "reefers" is primarily a result of the increasingly heavy current movement of perishables, according to the O.D.T. Loadings of perishables for the week ended December 5 were 14.4 per cent greater than for the comparable 1944 week, it was pointed out, and no relief is expected for at least 60 days.

The action taken by the O.D.T. was an amendment of Special Direction ODT-18A-2A, increasing the minimum loading for potatoes (except certified seed potatoes) from 45,000 lb. to 50,000 lb. The amendment is effective from December 15 to February 15, 1946.

\$44 a Day Charge—By its fourth revised Service Order No. 180, also effective December 15 to February 15, 1946, the commission has directed that demurrage on refrigerator cars held beyond tariff free time for orders, bill of lading, payment of freight charges, reconsignment, diversion, reshipment, inspection, forwarding directions, loading or unloading, shall be assessed at the rate of \$11 per day for the first day, \$22 for the second day, and \$44 per day thereafter. Detention of cars affected by this order is not subject to average agreements. The order applies to both interstate and intrastate commerce, and requires that the prescribed demurrage charges be applied instead of tariff charges for storage of freight in refrigerator cars at or short of ports for water movement. The order applies to cars designated as class "R" and provides for exceptions in case of severe weather or delays due to floods or similar conditions.

New limitations on free time on refrigerator cars have been prescribed by the commission in Service Order No. 394, likewise effective December 15 to February 15, 1946. Despite tariff provisions, free time on such cars held for loading or unloading in domestic commerce, both interstate and intrastate, is limited to 48 hours, while on cars held for loading or unloading at or short of ports in coastwise, inter-coastal or foreign commerce a 5-day limit is set. In both cases, Sundays and legal holidays are to be included in computing free time.

Other Service Orders—By Service Order No. 396, which is effective December 15 through February 15, 1946, the commission has established restrictions on holding for diversion, reconsignment or disposition orders carload shipments of perishables,

that is, fresh or green fruits or vegetables, other than cold pack, and including citrus fruit, potatoes, onions, bananas, berries, cantaloupes, cocoanuts, cranberries, melons and pineapples. The order directs that, where such cars are held beyond two full days, exclusive of Sundays and holidays, after arrival at any point prior to ultimate destination and reforwarded on request of consignor, consignee, or owner, the full local or joint rate (not the proportional, reshipping or transshipping rate) shall apply to the reforwarding point, plus the full tariff rate from the reforwarding point, in addition to all other applicable charges. The order applies to refrigerator cars loaded with perishables when stopped for partial unloading at a hold or reconsigning point when the order for such stop is received by the carrier subsequent to arrival of the car at that point. It does not apply, however, to shipments where New York harbor lighterage regulations are effective.

By Amendment No. 1 to Service Order No. 369, the commission has advanced from December 15 to January 15, 1946, the expiration date of that order which was issued last month to reinstate the sliding scale of box car demurrage charges ranging up to \$16.50 per day.

The commission has canceled two service orders, Nos. 153 and 249, effective December 15. The first prohibited peddling of grapes from freight cars; the second required permits for the movement of cotton to compresses or storage facilities in certain southern states.

Rail Counsel Named Federal Reserve Director

The board of governors of the Federal Reserve System has announced today the appointment of Russell L. Dearmont, of St. Louis, Mo., general counsel for trustee of the Missouri Pacific, as a Class C director of the Federal Reserve Bank of St. Louis for the unexpired portion of the term ending December 31, 1946.

House Bill to Put Dispatching Under I. C. C. Control

Representative Crosser, Democrat of Ohio, has introduced H. R. 4927 to give the Interstate Commerce Commission regulatory control over railroad train dispatching methods and facilities. As noted in the *Railway Age* of November 10, page 763, a similar bill was recently introduced in the Senate by Chairman Wheeler of the committee on interstate commerce.

Order on H. & M. Fares

The Interstate Commerce Commission has issued an order clarifying and interpreting previous orders which authorized the Hudson & Manhattan to maintain increased fares on its downtown line into Hudson Terminal, New York City, for the period of the war and "six months thereafter." The clarifying order stipulates that the increased fare on the alternative basis of 11 tokens for \$1 or a cash fare of 10 cents may be maintained for the period of the war "and six months after its legal termination." The order also reopened the proceeding (I. & S. Docket No. 4394) for further hearing at a time to be fixed later.

3-Year Expenditures of \$1.6 Billion Seen

Class I roads base plans on billion-a-year net railway operating income

Class I line haul railroads contemplate the expenditure of some \$1,635,821,857 for the three years following the end of the war, according to forecasts which they have supplied the Interstate Commerce Commission, a summary of which is published in the latest issue of the "Monthly Comment on Transportation Statistics" issued by its Bureau of Transport Economics and Statistics. This total is divided rather evenly between road and equipment property items, the respective totals for those two categories being \$753,781,502 and \$882,040,355, or 46.1 per cent and 53.9 per cent of the total. The distribution of the total by years is likewise fairly even, the report adds, since the variations are within a range of less than 10 percentage points.

On Basis of '41 Net—These data are subjects to certain qualifications, the bureau points out. In order to secure uniformity of replies, the carriers were asked to base their estimates upon the assumption that their net railway operating income for the three years following the end of the war would average that of 1941, unless a particular road considered some other income basis of estimating to be more appropriate. Most of the roads chose the 1941 basis, it developed and the total predicted expenditure thus assumes that their annual net railway operating income during those three years will average that of 1941.

Another qualification relates to the date of the end of the war. When the request for these figures was sent to the carriers by the bureau fighting was still in progress in both Europe and the Pacific. The European phase ended shortly afterwards, but nearly all of the carriers' replies had been received by the bureau before V-J Day, with the result that most of the roads had to resort to speculation as to the duration of the war in Asia. It appears that most managements estimated a considerably longer duration of the war with Japan than actually eventuated, and the validity of their forecasted expenditures may be somewhat affected thereby, it is noted.

The carriers' responses indicate that accumulations of capital from earnings and other sources during the war period or earlier will play a relatively insignificant part in railroad capital expenditures of the first three post-war years, the bureau explains. The roads estimate that borrowing and accumulations from earnings or other company sources during those three post-war years will be relied on to finance more than 90 per cent of the total expenditures. Specifically, it is expected that 29.7 per cent of the funds, or \$486,373,544, will be obtained by incurrence of indebtedness, \$1,024,141,145, or 62.6 per cent, by accumulations during the post-war period and only 7.7 per cent, or \$125,307,-

168, by accumulations prior to the post-war period. No carrier indicated any expectation that any of its requirements for funds would be met through equity financing.

Plan No Equity Financing—The fact that no road expected to utilize capital stock for financing capital expenditures in the first three post-war years reflects a variety of considerations, according to the bureau, such as "the past extensive reliance of the railway industry on financing by obligations, the present exceedingly low costs for borrowed capital, the leverage advantage to existing common stockholders of financing at these low rates, the prevalence of par value stock issue, and other similar factors." The relatively large anticipated utilization of current accumulations during the post-war years may be related, it adds, to the assumed basis of an average net railway operating income equal to the \$998 million reported for 1941.

The publication then comments briefly on the improvement of the financial position of the railways during the war period, comparing certain data for August 31, 1945, with equivalent December 31, 1941, figures. There has been a slight actual decline in the ratio of current assets to current liabilities between those dates, but the net working capital position of the class I roads shows an improvement of approximately 141 per cent, or \$1,125,667,235, despite an increase of 400 per cent in accrued tax liabilities, the bureau observes. The corresponding increase in "quick assets" represented by cash and temporary cash investments was about 250 per cent, or \$2,257,965,786.

Rapid Amortization—Carrying further its comment a month earlier on the effect on railroad operating results of the extraordinary charges for amortization of "emergency facilities," reported in *Railway Age* of November 17, page 837, the bureau noted that the reported October operating expenses included charges for amortization of defense projects of \$99,892,226 in excess of the "normal" accruals of \$10,053,279. Reported concurrent credits to railway tax accruals because of these "abnormal" charges, then, totaled \$70,966,509, resulting in a reduction in net railway operating income and net income for October, according to the bureau, of \$28,925,717. This net reduction amounts to 34.7 per cent of the October net railway operating income which otherwise would have been recorded. The corresponding percentage for September was 35.4. It is estimated that about \$385 million of unamortized defense projects remained as of November 1.

Meanwhile, the bureau's regular monthly review of revenues showed that the freight revenue of the Class I roads in October, on a daily basis, was 5.6 per cent lower than for September and 22.1 per cent under October, 1944. The freight revenue index (based on the 1935-1939 monthly average as 100) was 183.4, continuing the decline that has been in progress since June, when it was 235.2. September's figure was 194.3.

October passenger revenue, on a daily basis, was 1.2 per cent more than for September, and 0.1 per cent more than for October, 1944. The October passenger revenue index was 418.3, compared with

September's 413.5 and the June high of 449.0.

Freight Cars—The bureau comments at some length on data relating to the installation and retirement of freight cars for the period from January 1, 1939, to October 31, 1945. In this interval the Class I roads installed 179,757 new and second-hand box cars, and retired 167,280. The rate of turnover was greatest in 1940, when 36,457 box cars, or 5.2 per cent of the total at the beginning of the year, were installed, and 35,564, or 5.0 per cent of the total, were retired. The smallest turnover in box cars was in 1943, when war controls over new construction were in effect. In that year only 3,099 box cars were installed and 12,889 retired, both figures being minima for the period under study. If the turnover in box cars for the calendar year 1945 ends at the same rate as for the first 10 months, it will exceed the rate for 1942 and 1943, but not that for the years 1939-1941. Over the six years 1939-1944, the average annual rate of installation of box cars was 3.7 per cent, and of retirements, 3.3 per cent.

Flat cars installed during the 6½ years ending October 31 numbered 19,335, while 17,574 were retired. The greatest rate of turnover was in 1942, when 4,763 were installed and 1,729 were retired. The average annual rate of installation of flat cars was 5.0 per cent, and of retirements, 4.3 per cent.

In the period under study, 5,126 stock cars were installed and 9,113 retired. The greatest turnover was in 1939, as a result mainly of the retirement of 3,421, or 5.8 per cent of the total. The average annual rate of installation of stock cars (1939-1944) was 1.2 per cent, and of retirements, 2.5 per cent.

Gondola and hopper cars installed in the whole period numbered 167,668, while 104,929 were retired. The turnover peak was in 1940, when 32,117 were installed, or 4.2 per cent of the total, and 26,738 were retired, or 3.5 per cent of the total. The average annual rate of turnover in gondolas and hoppers was 3.2 per cent for installations and 1.9 per cent for retirements.

Class I roads and private car lines controlled by them installed 12,849 refrigerator cars in the same period and retired 20,264. The year of maximum turnover was 1940, when 3,291 were installed and 5,990 retired, or 2.9 per cent and 5.3 per cent, respectively, of the total. The average annual rate of turnover was 4.7 per cent for installations and 6.0 per cent for retirements of railroad-owned refrigerator cars, and 0.9 per cent for installations and 1.8 per cent for retirements by railroad-controlled private lines.

November Employment

Railroad employment increased 0.69 per cent—from 1,396,637 to 1,406,239—during the one-month period from mid-October to mid-November, but the November total was 0.09 per cent below that of November, 1944, according to the preliminary summary based on reports from Class I line-haul roads and prepared by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. The in-

dex number, based on the 1936-1939 average as 100, was 136.6, as compared with October's 132.4 and November, 1944's 136.7. By employee groups, the changes from the previous month ranged from the 1.83 per cent increases in transportation other than train, engine and yard to the 0.36 per cent decrease in yardmasters, switchtenders and hostlers. As compared with November, 1944, the changes ranged from a 3.09 per cent increase in the maintenance of way and structures group to a 3.05 per cent decrease in the train and engine service group.

Train Radio Regulation Bill Approved by I. C. C.

Through a letter to Senator Wheeler, Democrat of Montana and chairman of the Senate interstate commerce committee, from Commissioner Splawn, chairman of the legislative committee of the Interstate Commerce Commission, the commission has expressed its general approval of S.1537, a bill recently introduced by Mr. Wheeler which would authorize the commission to require railroads to install and maintain wayside and train communication systems conforming to standards prescribed by it.

The proposal, said the commission comment, "reflects the wide interest in train communication systems, particularly those employing the principle of radio, which has been recently manifested. The practical use of such systems to increase safety of railroad operation is to some extent now in the experimental and development stage." Exemption of street and interurban electric lines from the scope of the bill was suggested.

"Conspiracy" Only a Word, Says the Attorney General

The function of the office of the Attorney General is to be the "people's lawyer,"—not always to be "combative and hostile, carrying the sword of the crusader and the threat and keys to the jail, but rather, where outright crime is not involved, to establish principles of law with broad regard for the defendant, . . . to help industry, to help government, and to help the people within the framework of free enterprise." So, at any rate, asserted the present incumbent, Tom C. Clark, in a speech prepared for presentation at a December 7 meeting in Birmingham, Ala., of the Alabama State Bar Association, in which he referred, among other matters, to the department's "battle against the freight rate differential conspiracies."

In carrying on these "battles," Mr. Clark observed, "sometimes the accusatory language of the law is harsher than the intent of the Attorney General in using it. This is true, for example," he added, "in the lawsuit instituted by the state of Georgia in the Supreme Court of the United States against certain railroads, in which the Department of Justice is assisting Georgia. The suit complains that the railroads, in violation of the anti-trust laws, get together in meetings, over which the Interstate Commerce Commission has no jurisdiction, and decide among themselves as to which rates shall be filed with the commission. It is maintained that even those railroads desiring to help the South are prevented in these meetings from doing so and that the net result is discrimination against the

southern shipper and southern industry, and southern labor."

It is true, the Attorney General continued, that "the railroads contend that they do no wrong in these meetings, and that they are absolutely necessary if the carriers are to perform their public duties intelligently. The accusatory language of the law of which I speak describes the meetings as conspiracies and the participants as conspirators. Understandably perhaps, the railroads object to being thus described. Now I am not going to try this case, . . . but I am sure that I am within the reservation of legal courtesy if I point out that if Georgia wins the case, then it is to be presumed that the objectionable features of these conspiratorial meetings will be removed by the court's decree, and that the South will thenceforward enjoy the benefit of free and fair play in the making of its railroad rates.

"Now, what do I mean by 'fair play'? We have documents to show that in consequence of the meetings of which I speak and which we are seeking to prevent, the rates on pulpboard, for instance, from the South to the North are 10 per cent higher than the rates paid by the northern producer. The difference between the present rates on pulpboard from Mobile, Ala., to Cleveland, Ohio, and Pittsburgh, versus the rates announced by the southern carriers is 5 cents per 100 lb. On a car of pulpboard weighing 80,000 lb, this results in a penalty of \$40 per car over and above the charges which would have prevailed had the southern rail carriers been permitted to make effective the rates announced by them. Consequently the northern purchaser places his orders with a northern or western pulpboard manufacturer.

"This strikes an unfair blow at the economic structure of the South and means that the increased freight charge must be taken either from the profit of the southern producer, deducted from the pay envelope of southern labor, or squeezed out of the price paid the southern farmer for his pulpwood. That's a cruel economic wrong.

and the Department of Justice would be just as aggressive in fighting such an injustice if business practices like these were perpetrated by the South against the North."

October Accident Statistics

The Interstate Commerce Commission on December 11 made public its Bureau of Transport Economics and Statistics' preliminary summary of steam railway accidents for October and this year's first ten months. The compilation, which is subject to revision, follows:

Item	Month of October		10 months ended with October	
	1945	1944	1945	1944
Number of train accidents*	1,230	1,304	14,074	13,440
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	121	129	1,376	1,288
Injured	108	100	1,037	987
Passengers on trains:				
(a) In train accidents*			56	125
Killed	49	133	1,456	1,421
Injured	281	203	2,323	2,370
(b) In train-service accidents				
Killed	10	2	60	48
Injured				
Travelers not on trains:				
Killed	5	91	15	8
Injured	91	91	906	857
Employees on duty:				
Killed	74	81	723	810
Injured	3,758	4,010	39,220	39,049
All other nonpassengers:**				
Killed	226	181	1,647	1,568
Injured	602	658	5,590	5,452
Total—All classes of persons:				
Killed	436	393	3,877	3,847
Injured	4,889	5,195	50,532	50,136

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than \$150 to railway property.

** Casualties to "Other nonpassengers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and nontrespassers, were as follows:

Persons:	203	156	1,477	1,388
Injured	465	400	3,320	3,143

Approve Greyhound's Acquisition of Florida Motor Lines

Expansion of the bus operations of the Greyhound Corporation will result from a decision of Division 4 of the Interstate Commerce Commission to authorize it to acquire control of Florida Motor Lines by exchange of stock. The proposal has been under consideration since February, 1944, and an adverse recommendation was made in an examiner's proposed report, but the division held the transaction in the public interest in view of anticipated savings, for example through use of standardized equipment in seasonal operations in different sections of the country, rather than having to store it in periods of light traffic.

The acquisition will be accomplished by exchange of 1 3/4 share of Greyhound common stock for each share of Florida capital stock, 98.6 per cent of which had been deposited for exchange on this basis, and Greyhound was authorized to issue 239,127 additional shares of common stock to complete the transaction. Florida operated 3,786 route miles entirely within the state, and had 140 buses in service, the division's report indicated. It is the largest bus operator in the state, with routes blanketing most of Florida except the western panhandle and the section south of Tampa, and there is no other bus service over most of its routes.

Emergency Board Report

The White House has made public the report received by President Truman from the National Railway Labor Panel emergency board which was appointed recently by Panel Chairman H. H. Schwartz to investigate a dispute between the Pacific Electric and the Brotherhood of Railroad Trainmen. The dispute involved two alleged grievances of the B. of R. T.

In one case that brotherhood was protesting that the carrier, when it created the positions of service director and assistant service director, reclassified work

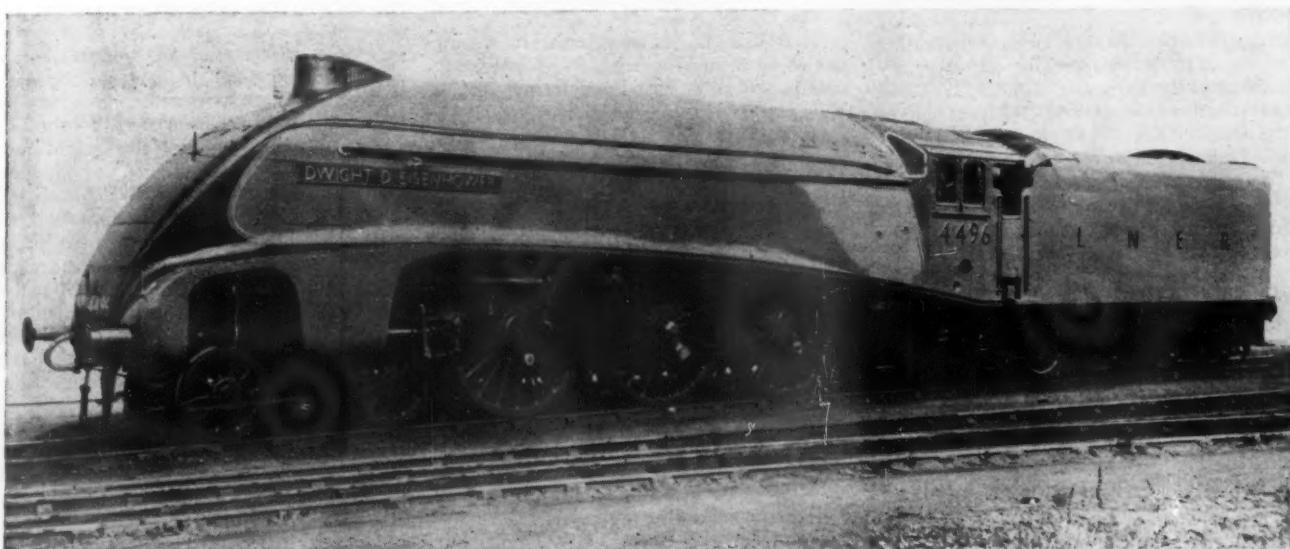


Photo Courtesy British & Irish Rys., Inc.

The First London & North Eastern Streamlined Pacific Locomotive to Emerge in Traditional Royal Blue Since the War Has Been Named for the Former Supreme Allied Commander, General Dwight D. Eisenhower

in such a way as to give the Brotherhood of Railway Clerks jurisdiction formerly held by the B. of R. T. The emergency board found that it had no jurisdiction over this dispute which was "properly within the jurisdiction of the National Railroad Adjustment Board."

The second dispute involved a demand of the B. of R. T. for the application of seniority principles in connection with appointments to various supervisory positions below the rank of superintendent. The emergency board held that the proposed seniority rule was "too far reaching when applied to supervisory positions," and thus should be denied "in its present form and extent."

Representation of Employees

The Brotherhood of Locomotive Firemen and Enginemen has supplanted the Brotherhood of Locomotive Engineers as the Railway Labor Act representative of locomotive engineers employed by the Kentucky & Indiana Terminal, according to results of a recent election which has been certified by the National Mediation Board. In another recent election the Milwaukee Road Mechanical Foremen's Association, Inc., supplanted the American Railway Supervisors Association, Inc., as representative of mechanical department foremen and supervisors employed by the Chicago, Milwaukee, St. Paul & Pacific.

Locomotive engineers, firemen and yardmen on the Natchez & Southern have chosen the Brotherhood of Railroad Trainmen,

while Louisville & Nashville patrolmen (including sergeants and watchmen) have chosen the National Council, Railway Patrolmen's Union, American Federation of Labor. Neither of these employee groups was previously represented. On the Gulf, Mobile & Ohio and Pittsburgh, Shawmut & Northern, the American Train Dispatchers Association has extended its coverage to include all train dispatchers, including chief dispatchers.

Senate Confirms Reappointment of Lee and Patterson

The Senate on December 10 confirmed President's Truman's reappointments of Interstate Commerce Commissioners William E. Lee and William J. Patterson for new terms ending December 31, 1952. The nominations were reported favorably to the Senate from its committee on interstate commerce on December 7, and confirmation came without discussion.

Holiday Schedules at I. C. C.

Offices of the Interstate Commerce Commission, the National Mediation Board, and other federal government agencies will be closed for the Christmas and New Year holidays from Friday evening, December 21, until Wednesday morning, December 26, and from Saturday evening, December 29, until Wednesday morning, January 2, 1946. This is pursuant to President Truman's recent executive order applying to all federal agencies.

Materials and Prices

The following is a digest of orders and notices that have been issued by the Civilian Production Administration and the Office of Price Administration, since December 3, and which are of interest to railways:

Brake Shoes—Because of a serious shortage of railroad car brake shoes the C. P. A. has amended Direction 4 to PR 28 placing brake shoes among the items critical to reconversion. A recent survey of Class I railroads showed that the inventory of railroad brake shoes is reduced to about 20 days supply, compared to a normal inventory of 60 days. Producers, who normally carry a 60 days inventory, have virtually none on hand. Under amended PR 28, manufacturers of brake shoes are now eligible to apply for a CC rating for their bottleneck materials, principally sheet and strip steel, to remedy this situation.

Lumber—For the continuance of its program to stimulate the production of logs, lumber and lumber products during the reconversion period, the C. P. A. has retained a number of key personnel of the Lumber and Lumber Products Division of the W. P. B.

Mathias W. Nienhous, formerly Deputy Director of W. P. B.'s Lumber Division, heads the reorganized group as chief of the Lumber Branch of the C. P. A.'s Forest Products Division. Working immediately with him is John Foley, technical consultant.

The former Operations Branch of the Lumber Division, under W. P. B., is now called the Production Section and is headed by Harold Holman. This section is charged with assisting in breaking bottlenecks in the fields of tires, trucks, tractors, manpower, wage and price problems, availability of surplus property, food and stumpage where these problems have any bearing on lumber production.

Application for priorities assistance, on form WPB 541-a, under Direction 5 to PR 28, for capital equipment, maintenance, repair and operating supplies, and construction items needed by the lumber industry also are handled by the Production Section. Former Operations Branch men working in this section are A. E. Favaz, Lee Settel, Carl Bentley and James Deppa.

The distribution phases of the new branch's

activities are in charge of Stanley H. Ferguson, who was Deputy Administrator of the old lumber control order under Donald Campbell. Mr. Ferguson and Harry Rosenberg work with applications (on WPB 541-a) for priorities assistance in securing lumber and lumber products. They will also handle inventory controls on the consumer, to discourage speculative buying, and the expediting of lumber deliveries where the needs of reconversion demand it.

Paint Brushes—All restriction governing the manufacture of brushes made from "pigs" and "hogs" bristles and the sale of these brushes have been removed, through amendment of Order M-51, which was designed to conserve bristle supplies for military and war industry use. These controls included limitations on the kinds of painters' brushes which could be manufactured and on the bristle content of certain window washing and paste brushes. The revised order is intended to insure a fair and orderly distribution of the bristles in the R. F. C. stockpile and to conserve those sizes of bristles that are still in short supply. The stockpile was acquired primarily to meet demands of the military and war industries.

The C. P. A. has estimated that, on the basis of present supply, there will be sufficient bristles under the relaxed provisions of M-51 to satisfy the domestic economy for the first six months of 1946. By the end of that period it is expected that new supplies will be available from the formerly occupied areas in China that are the chief source of bristles.

Priority Assistance—The C. P. A. has announced that all its field offices will be closed on or before December 31. After December 7, all applications for priorities assistance under PR 28, heretofore handled in the field offices, must be forwarded to its headquarters in Washington for handling.

After December 31, there will be no one available in any field office to aid applicants in the filling out and filing application forms for priorities assistance. The present thirteen regional and six district offices, although closed for the transaction of all C. P. A. business after the first of the year—except for compliance matters—will

be used only by the Compliance Division and a limited number of administration personnel engaged in liquidating field activities.

Replacing the field offices as sources of supply for priority application forms, will be 115 first class post offices in cities where C. P. A. field offices have been located. The forms will also be available in the Smaller War Plants Corporations field offices. C. P. A. officials explained that there would be no one available in the post offices to assist applicants in filling out the forms. The revised CPA 541-A forms, on which application is made for assistance in breaking industrial reconversion bottlenecks under PR 28, will also be available in Room 1501 Social Security Building, Washington, D. C., as will other forms which business may need.

Steel Sheets—Resellers of flat galvanized steel sheets have been authorized by Amendment No. 36 to RPS 49, effective November 30, to pass on to their customers one-half of the mill price increase of 20 cents per 100 lb. which they have been required to absorb since the higher mill price was established on May 21, 1945. This action was taken, O. P. A. said, because latest data submitted by the industry indicate the operating expense rate for distributors of heavy line steel products now exceeds the trading margin provided by existing prices for flat galvanized sheets.

An adjustment in the reseller's price sufficient to permit him a trading margin equal to the operating expense rate is required under O. P. A.'s "product standard" basis of adjusting prices. The increase in resellers' prices for flat galvanized sheets, O. P. A. said, will enable warehouses and jobbers to obtain a trading margin over cost of 22.5 per cent, compared with approximately 20.5 per cent previously.

O. P. A. also announced that as the result of a reexamination of warehouse and jobber operating data submitted to O. P. A., a trading margin of 22.5 per cent for heavy line products will hereafter be used in calculating the amount of relief granted resellers applying for adjustments in prices, rather than the 18.5 per cent trading margin used previously.

Southern Pine—An upward adjustment in the ceiling prices for Southern pine lumber at the mill level has been provided by Amendment No. 14 to Second RMPR 19; RMPR 19 A; and Amendment No. 13 to MPR 215, all effective November 29. Ceiling prices for Southern pine produced by mills generally have been increased 4.7 per cent or an average of \$2.25 per M f.b.m. For small mills that produce rough lumber only and do not operate planing mills, the increases average \$5 per M f.b.m.

Prices

Brass Mill Products—The O. P. A. has denied reports in the trade that a general increase in ceiling prices for brass mill products was imminent. The price agency added that the brass mill products price situation would, however, be reviewed when additional financial returns from producers are submitted to O. P. A. after January 1, 1946. Members of the Brass Mill Products Industry Advisory Committee met with O. P. A. officials in New York City on December 7, to discuss changes in production costs and realizations accompanying changeover from production of wartime brass products to peacetime products.

Cement—Manufacturers' maximum prices for all types of Portland cement except white cement have been increased 20 cents a barrel in two producing and marketing regions: (1) Bureau of Mines District 8—Nebraska, Kansas, Oklahoma, Arkansas and Western Missouri; and (2) Bureau of Mines District 10—Idaho, Montana, Wyoming, Utah, Colorado and New Mexico.

Based on an extensive O. P. A. cost study, the action, effective December 11, was taken to relieve financial hardship in the industry caused by increased manufacturing costs and to prevent the loss of essential production in those areas.

The increase will be passed on to the consumers, O. P. A. said, since resellers' customary margins are small. Buyers of concrete for resale in ready-mixed form may add the amount of their increased cost because of this adjustment to established maximum prices per cubic yard, in accordance with the provisions of a separate regulation (MPR 592).

The cement regulation, O. P. A. explained, freezes manufacturers' ceilings at the amount they charged for deliveries completed between March 1 and March 15, 1942, and provides for adjustments for changes in actual transportation

costs. Basing point dollar-and-cent ceilings that vary according to delivery points are established.

Tie Logs—An increase of \$4 per thousand feet in the ceiling prices of all logs, except white birch, and proportional increases in tie cuts and other charges for all species, sold in Michigan, Wisconsin and Minnesota have been provided by Amendment No. 4 to MPR 533-2 effective November 29. The log and tie cuts price increase is necessary to cover a 10-cent an hour authorized wage increase, deterioration of equipment, increases in costs of materials and supplies and reduction in output per man-hour. An O. P. A. study among Lake States loggers showed that they could not absorb the wage increases because of their present low margins. Furthermore, for the same reason, a price increase might have been required even if no wage increases had been granted to avoid a reduction in production.

Also, prices for grades 2 and 3 of white birch logs are established and all white birch log prices are set at the level of hard maple logs. The small amount of information available to O. P. A. when prices for white birch logs first were established led the agency to price them considerably below hard maple. Recently, the producers have submitted information showing that white birch and hard maple logs normally sold for the same price.

Specific prices for tie cuts in the northern part of the lower peninsula of Michigan have been added. Those prices, previously, were accidentally omitted from the regulation.

To simplify the administrative work-load, buyers and sellers in Zone 1 do not need O. P. A. permission to add 10 cents per thousand feet to the ceiling price for each mile the logs are hauled beyond the original 25 miles.

Tool Handles—Dollar-and-cent ceiling prices have been established for hickory striking tool handles sold by producers and distributors, effective December 10. The new ceilings are approximately three per cent over the average of old prices at the manufacturers' level, and reduced about three per cent under the average at the distributors' level. Prices for replacement handles at retail, O. P. A. said, should be no higher than those presently being charged.

Equipment and Supplies

LOCOMOTIVES

American Locomotive Has Large Overseas Export Backlog

Unfilled steam and Diesel locomotive orders for overseas export by the American Locomotive Company now total 558 units, it was reported on December 6 by D. W. Fraser, president. This figure includes 160 locomotives placed last week with the company for France.

Up to November 30, the company had built and shipped 421 locomotives for service abroad. For the current year, units already shipped and those on order for the export trade were listed as follows: France, 420; India, 176; Belgium, 240; Portugal, 22; Brazil, 85; Mexico, 22; Cuba, 10; Jamaica, 3; Honduras, 1. In addition to these, the company so far this year has delivered 528 locomotives to the War Department, of which 421 were assigned to Russia before lend-lease was cancelled.

The new French order is in addition to one for 260 placed with the company last spring by that country. The first locomotives in this order were delivered in September, and others are in various stages of construction at the Schenectady, N. Y., plant. The 22 locomotives delivered to Portugal this summer were the first loco-

motives ever built for Portugal in the Western hemisphere.

Indicative of increased use of Diesels in Central and South America are orders placed by the Central of Brazil for 34 1,000-hp. American Locomotive-General Electric units and orders for six more placed by the Mexican Government Railways. The latter order adds to the present Mexican Diesel fleet which was built by the company last year. Most of the Brazilian Diesels have been shipped.

American Locomotive also has delivered six steam locomotives to the Parana Santa Catharina of Brazil and is building 30 steam locomotives for the National Department of Railways of that country. Mexico recently ordered 16 large steam locomotives to run between Mexico City and the United States border. The locomotive company also reports that substantial locomotive orders from other countries are in various stages of negotiations.

The **LIVE OAK, PERRY & GULF** has ordered two 600-hp. freight and switching Diesel-electric locomotives from the General Electric Company.

The **FRENCH GOVERNMENT** has placed orders for 400 steam locomotives of 2-8-2 wheel arrangement, allocating 160 to the American Locomotive Company, 160 to the Baldwin Locomotive Works and 80 to the Lima Locomotive Works.

The **MISSOURI-KANSAS-TEXAS** has placed an order with the Electro-Motive division of the General Motors Corpora-

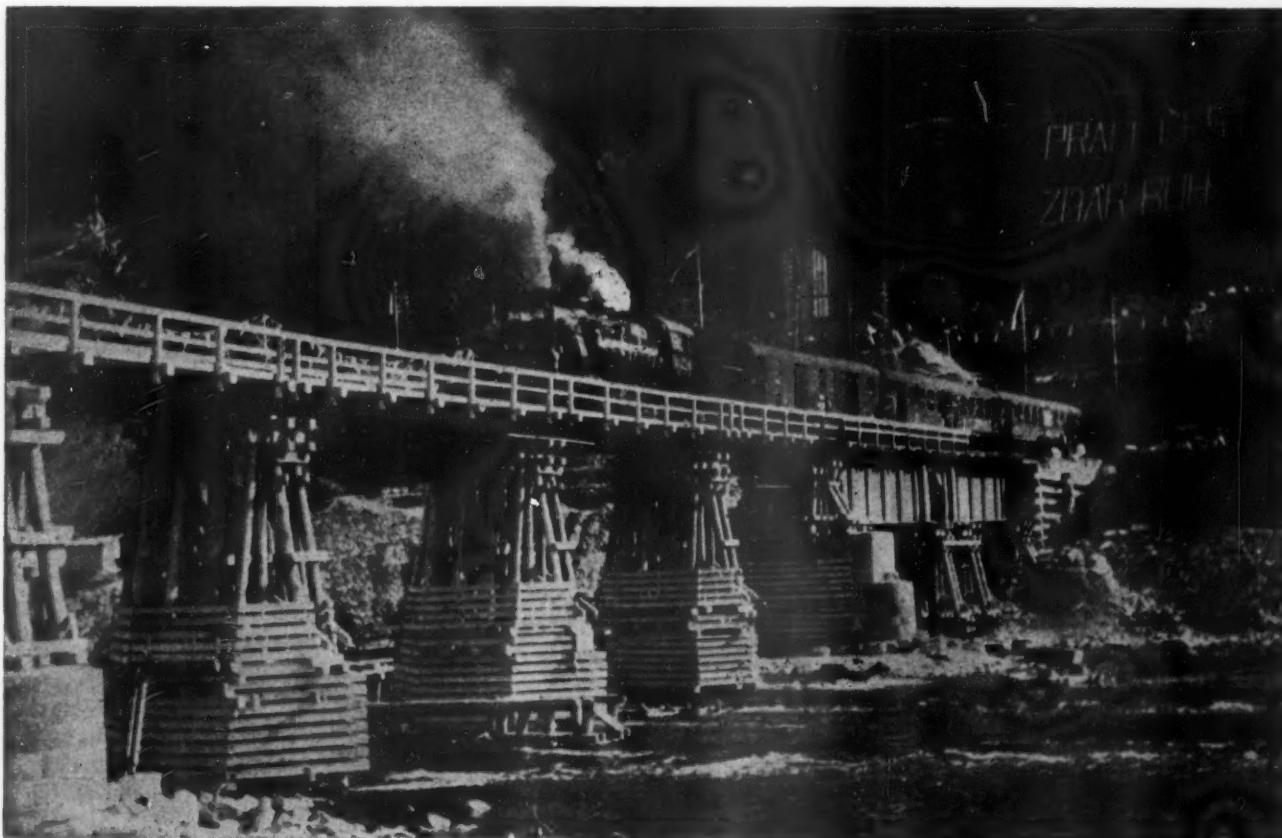


Photo by British Combine

A Rebuilt Section of the Railroad Between Zilina and Vrutky, in Czechoslovakia, Which Country Suffered Complete Destruction of All of Its Railroad Bridges by the Germans



Southern Pacific's great war record

THE stream-lined *Daylights*, powered by Lima-built 4-8-4s, were first introduced by the Southern Pacific in 1937, on the coast line run between San Francisco and Los Angeles. Their appeal was immediate, and, with their companion *Daylights* on the San Joaquin Valley route, they soon rated among the most popular trains in America.

Came the war, and the *Daylights* played a vital part in military movements, handling 833,510 passengers in 1942, 1,153,585 in 1943, and 1,268,008 in 1944. Now busy in aiding the homecoming of thousands of veterans, the Lima-powered *Daylights* soon again will be speeding vacation-travelers over the Southern Pacific's famous scenic routes.

LIMA LOCOMOTIVE WORKS



INCORPORATED, LIMA, OHIO

Give your locomotive a chance to do its best

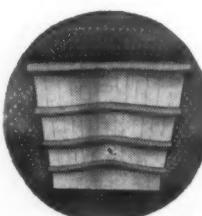


By maintaining a complete brick arch in its firebox at all times, you give the locomotive a chance to develop its maximum steaming power.

And the heavier the load and higher the speed, the more important it becomes to secure maximum power from each ton of fuel.

The power-increasing and fuel-saving value of Security Sectional Arches has been demonstrated through long years of service on all types of locomotives.

**HARRISON-WALKER
REFRACTORIES CO.**
Refractories Specialists



AMERICAN ARCH CO. INC.
60 East 42nd Street, New York 17, N.Y.
Locomotive Combustion Specialists

tion for seven 4,500-hp. Diesel-electric freight locomotives, with delivery slated for late in 1946. The total cost will be in excess of \$2,500,000. Each locomotive will consist of two 1,500-hp. lead units and one 1,500-hp. booster unit.

FREIGHT CARS

The CHICAGO, ROCK ISLAND & PACIFIC has ordered 250 50½-ft. 50-ton automobile cars from the American Car & Foundry Co. for delivery in the first and second quarter of next year. The railroad also has on order 500 40½-ft. 50-ton box cars for first quarter, 1946, delivery with the Pullman-Standard Car Manufacturing Company.

PASSENGER CARS

New York Central Buys 22 More Trains

Reportedly the largest single order for passenger equipment in the history of American railroading was announced on December 13 by Gustav Metzman, president of the New York Central System. The \$34,000,000 order represents 22 luxurious, streamlined sleeping car trains totaling 420 passenger cars. These are in addition to the 300 de luxe passenger cars already under construction for Central's daytime trains. The 720 new cars currently on order are the equivalent of 52 new streamliners and represent a total cost of \$56,000,000.

Each one of the sleeping cars will be of the all-room type and will include the latest developments of the car builders' art in single rooms, double bedrooms and de luxe bedroom suites. The new type dining cars, lounges and observation cars have been planned by the Central's engineers and designers in cooperation with the manufacturers' experts in these fields.

Of the new order, 200 cars for sleeping car service will be built by the Pullman-Standard Car Manufacturing Co., Chicago, of high tensile, low alloy steel, with welded girder construction, and will be painted the famous "Century" two-toned gray; 112 cars of stainless steel will be built by the Edward G. Budd Manufacturing Company; and the American Car and Foundry Co. will build 108 streamlined baggage, baggage-mail and railway post office cars.

The first of the new sleeping cars, embodying the most modern ideas in safety, comfort and decoration, are expected to be ready next September. Thereafter, they will come in a steady flow from the manufacturers until completion of the order in March, 1947. As the new equipment is received, it will go into service on the "20th Century Limited," the "Commodore Vanderbilt," the "Advance Commodore," the "Southwestern Limited," the "Detroiter," the "Wolverine," the "Cleveland Limited," the "Iroquois," the "Ohio State Limited," the "New England States," and "Motor City Special."

Many of the new ideas making for greater comfort and luxury in these cars are the result of suggestions made in response to questionnaires which were distributed to the New York Central's passengers on its principal trains during the war. Thus, as

members of Central's postwar plans committee some 10,000 passengers helped design the equipment of these record making orders.

SIGNALING

The DENVER & RIO GRANDE WESTERN has placed an order with the General Railway Signal Company for the revision of the remote control machine at West Soldier Summit, Utah. Six track indication lights, a switch lever and two signal levers are being added to control a switch machine and four signals at a crossover.

The ELGIN, JOLIET & EASTERN has ordered materials from the General Railway Signal Company for a remote control installation at Hobart, Ind. The control machine will be equipped with four track indication lights and two miniature levers for the control of associated signals at a maximum distance of approximately three miles.

The NEW YORK CENTRAL has placed an order with the General Railway Signal Company for an all-relay electric interlocking to control an interlocking layout and a crossing with the Pennsylvania at Gardenville Junction, N. Y. The control panel will be equipped with 18 track indication lights, three switch levers, and 13 signal levers for the control of three switch machines, a switch lock and 14 Type SA signals.

The ALTON has ordered materials from the General Railway Signal Company for the installation of centralized traffic control on eight miles of single track between Plainview, Ill., and Rinaker. The control machine, which will be located at Brighton, Ill., 21 miles from the farthest controlled point, will have a control panel equipped with nine track indication lights and five levers for the control of two switch machines, a spring switch and seven signals.

The MISSOURI-KANSAS-TEXAS has placed orders with the Union Switch & Signal Co. covering the materials for the installation of absolute permissive block signaling on 31 miles of single track between Dallas, Tex., and Waxahachie, involving H-5 searchlight signals, color-light switch indicators, U-5 switch circuit controllers, relays, rectifiers, transformers and housings. The field installation work will be done by railroad forces.

The ATCHISON, TOPEKA & SANTA FE has ordered from the Union Switch & Signal Co. the materials for the installation of a remote-controlled electric interlocking at Ash Fork, Ariz., involving the control machine, M-22A dual-control electric switch movements, H-5 searchlight signals, T-2 hand-operated switch stands, with SL-21 electric locks, rectifiers, transformers, relays and housings. The field installation work will be done by forces of the railway.

The TEXAS & PACIFIC has placed an order with the General Railway Signal Company for the installation of centralized traffic control on 17 miles of single track between Willow Springs, Tex., and Wilkins. Twenty track indication lights and 14 levers

added to the present machine at Marshall, Tex., will control six switch machines, a switch lock, and 19 signals on this installation. Model 5D switch machines, Type D high signals, Type SA dwarf signals and G. R. S. roller switch point bearings will be used.

TRADE PUBLICATIONS

Single Acting Pile Hammers.—The McKiernan-Terry Corporation, New York, has published a 16-page bulletin, containing detailed information on a new line of single-acting pile hammers. This bulletin describes the special purposes for which these single-acting hammers are intended, and lists a number of their advantages, including underwater operation.

Specifications, cross-sectional diagrams and listings of component parts are included, as well as detailed data on operation. In addition, a table based on an established formula for the bearing power of piles offers aid in selecting the correct size of hammer.

Supply Trade

The Flannery Bolt Company, Bridgeville, Pa., has purchased the business and assets of the Fort Pitt Manufacturing Company and the Fort Pitt Bedding Company.

Howard Rushton, formerly works manager of the Pressed Steel Car Company, has been appointed general manager, freight car division, of the Mt. Vernon Car Manufacturing Co., a subsidiary of the H. K. Porter Company, Inc.

The Briggs Filtration Company has acquired the Briggs Clarifier Company. All of the officers of the new company served with the old company and nearly all of the personnel of the old company have been retained.

Raymond T. O'Keefe, Jr., vice-president of the Kopp Forge Aviation Company, has been elected vice-president of the Kopp Forge Company, Chicago. Mr. O'Keefe will be special assistant to the president in matters pertaining to the general operation of the business and also sales representative in the Chicago area.

Negotiations are in progress for the acquisition by the Koppers Company, Inc., of all of the capital stock of the Wailes Dove-Hermiston Corporation, Westfield, N. J., producers of bituminous protective coatings, in exchange for the issuance by Koppers of 15,550 shares of its common stock and the payment of \$100,000 in cash.

Paul W. Eberhardt has been elected a vice-president of Walter Kidde & Co., Inc. His principal duties will include management of domestic sales of the company's fire-fighting equipment in aviation and general industry, together with general supervision of field selling activities. Mr. Eberhardt has been associated with Walter Kidde & Co. since 1926.

H. Norman Miller, a member of the industrial sales staff of the Westinghouse

Electric Corporation at Portland, Ore., for the past 19 years, has been appointed manager for the company in the Portland area, to succeed L. G. Fear, who will act as the company's special representative in both the Seattle, Wash., and Portland areas to better coordinate all Westinghouse activities throughout the Pacific northwest and Alaska.

Wilson H. Moriarty, assistant to the president of the **National Malleable & Steel Castings Co.**, has been elected vice-president in charge of sales. **James A. Slater**, vice-president in charge of railway sales, has retired. Mr. Slater, whose career with National Malleable covered 48 years, will continue as a director and as assistant to president and will act as consultant in railway matters. He started with the company as an office boy in December, 1897, and was promoted to sales agent, railway sales manager for the Chicago office, assistant sales manager, sales manager, assistant vice-president, and vice-president. Mr. Moriarty was graduated from Case School in 1918 and served as a heavy artillery officer in the first World War. After a training period, he became resident inspector at the Cleveland, Ohio, plant and later held similar positions in



Wilson H. Moriarty

the East St. Louis, Ill., and Chicago plants. He was appointed chief inspector for all of the company's plants in 1927. Three years later he was appointed sales engineer at the Cleveland plant, and in 1939 was appointed that plant's sales manager. In June, 1942, he was promoted to assistant to the first vice-president, and in 1943 to assistant to the president.

S. Johnson, Jr. has been appointed assistant sales manager of the **Bendix-Westinghouse Automotive Air Brake Company**. **A. R. Leukhardt** has been appointed eastern regional manager and **E. W. McKay** southeastern regional manager with headquarters in Atlanta, Ga. **A. E. Wolfe** has been appointed regional manager with the following assistant managers comprising his staff: **W. L. Collins**, in charge of the western region; **J. F. Shumaker**, in charge of the central region and **J. V. Ralston**, in charge of the mid-west region. **D. H. Robinson** has been appointed service manager at the general offices in Elyria, Ohio; **H. W. Jack-**

son

OBITUARY

Clyde C. Farmer, director of engineering of the Westinghouse Air Brake Company, who retired in 1940, died on November 28, in Pittsburgh, Pa. He was 75 years of age. For a number of years Mr. Farmer was a machinist in the shops of



Clyde C. Farmer

the Southern Pacific and for a period of six months in 1891, was with the Westinghouse Air Brake Company's instructors engaged in the education of railroad officials and employes on all phases of railroad air brake work. He was appointed supervisor of air brakes for the Missouri, Kansas & Texas in the latter part of 1891 and to the same position with the Central of New Jersey in 1899. He helped to organize the Association of Railway Air Brake Men in 1893 and was elected president of the association in 1894. He joined the Westinghouse Air Brake Company as field inspector in 1901 and shortly thereafter was transferred to the Chicago district as mechanical expert. He was appointed resident engineer in 1905 and was advanced to the position of assistant district manager at Chicago in 1913, continuing as the directing head of engineering matters in the district. He was appointed director of engineering with headquarters at Wilmerding, Pa., in 1919 and he held this position until his retirement in 1940. Mr. Farmer had 532 patents issued in his name. He was awarded the George R. Henderson gold medal by the Franklin Institute of Philadelphia, Pa., in 1938 for meritorious inventions or discoveries in the field of railway engineering. He received the "Pioneers Build America" award from the National Association of Manufacturers in 1940. He was a member of the Air Brake Association, Traveling Engineers Association, and the Railway Club of Pittsburgh, Pa., and was the author of many engineering papers presented before these and other societies.

Frederic V. MacArthur, who retired on June 30, 1941, as secretary and assistant treasurer of the Link Belt Company, Chicago, died at his home in that city on December 9.

Financial

ABERDEEN & ROCKFISH.—*Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue \$50,000 of unsecured 3 per cent notes in connection with a loan of that amount obtained from the Security National Bank of Greensboro, Raleigh, N. C., for betterments.

BALTIMORE & OHIO.—*Asks Bids on Equipment Notes.*—The B. & O. has requested bids on a proposed \$1,200,000 issue of promissory notes. The notes will be designated series J, and will be issued, subject to the approval of the Interstate Commerce Commission, to finance approximately 86 per cent of the purchase price of 500 50-ton open-top steel hopper cars ordered from the Ralston Steel Car Company. Delivery of the cars is expected in February-April, 1946.

BOSTON & MAINE.—*Acquisition.*—This company has applied for Interstate Commerce Commission approval of an arrangement for purchase by it of the outstanding stock of the Troy & Bennington, which it now operates under lease. The B. & M. already holds 436 of the lessor's 1,508 shares of stock, and proposes to acquire the remainder at \$200 per share.

CHICAGO, BURLINGTON & QUINCY.—*Accepts Tenders on Bonds.*—This road has accepted tenders of \$49,765,000 of its bonds and has purchased \$32,470,000 of its general mortgage 4s due March 1, 1958 at 120 and \$17,295,000 of its first and refunding mortgage 4½s, Series B, due 1977, at 123.

DELAWARE, LACKAWANNA & WESTERN.—*Merger of Leased Lines.*—Division 4 of the Interstate Commerce Commission has approved arrangements whereby the properties of seven subsidiary leased lines will be acquired by this company by merger, thus simplifying the system capital structure, reducing fixed charges, and clearing up income tax liabilities in dispute and carrying further the program of acquisition of leased lines which this company has had underway, as reported periodically in this column. The companies to be merged are the Syracuse, Binghamton & New York; Sussex Railroad; Erie & Central New York; Passaic & Delaware; Chester Railroad; Newark & Bloomfield; and New York, Lackawanna & Western (Pennsylvania). The Lackawanna already owns all the stock of four of the lessor companies (the Chester, the P. & D., the E. & C. N. Y. and the N. Y. L. & W.) and substantial majority interests in the stocks of the other three, the remaining shares of which it plans to acquire for cash.

ERIE.—*Promissory Notes.*—The company has asked the Interstate Commerce Commission to approve an issue of \$350,000 of promissory notes in connection with the acquisition of 100 hopper cars from the Greenville Steel Car Company.

ILLINOIS CENTRAL.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to purchase the properties of the Dubuque & Sioux City and the Omaha Bridge & Terminal,

This
Com-
issue
es in
ob-
ank of
ents.

on
re-
issue
I be
sub-
Com-
ately
500
ered
De-
uary.

This
Com-
inge-
ding
it
M.
1,508
the

-Ac-
s ac-
onds
eral
and
ding
123.

ERN.
4 of
has
rop-
will
rue-
ring
car-
tion
had
this
are
ork;
New
Rail-
New
syl-
s all
nies
. Y.
ential
ther
in it

any
om-
0 of
ac-
een-

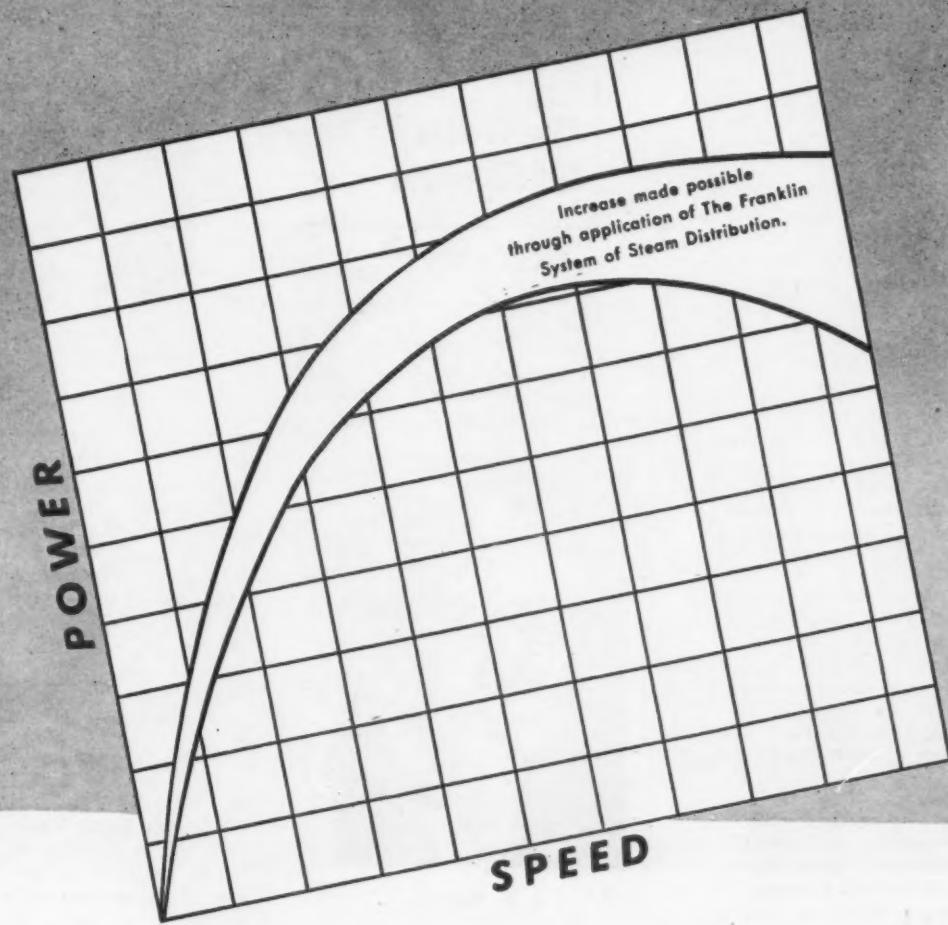
This
com-
our-
oux
nal,

945

HORSEPOWER INCREASED

35% OR MORE

AT HIGH SPEEDS



by the installation of
**THE FRANKLIN SYSTEM
OF
STEAM DISTRIBUTION**

Fifty new Pennsylvania T-1 locomotives
equipped with the Franklin System of Steam
Distribution are now entering service.



FRANKLIN RAILWAY SUPPLY COMPANY, INC.
NEW YORK • CHICAGO • MONTREAL

which it has operated under lease. As part of its plan for simplification of system capital structure, the I. C. proposes to eliminate these companies. It already owns the capital stock of the Dubuque, which in turn owns the stock of the bridge company.

ILLINOIS CENTRAL.—*Accepts Tenders.*—This road has accepted \$15,504,000 of system secured obligations under the tender invitation dated November 1. Top prices accepted were: For Sterling 3½s, 1950, 80.7, 4s of 1951, 83 and 3s of 1951, 81; for first mortgage 4s, 1951, 112.73 and 3½s of 1951, 109.76; for extended first mortgage 3½s, 1951, 110.77; for Springfield division first 3½s of 1951, 109.25; for St. Louis division and terminal first 3½s of 1951, 107.84 and 3s of 1951, 105.25; for purchased lines first 3½s, 1952, 106; for western lines first 4s, 1951, 110; for Omaha division first 3s of 1951, 104; for Litchfield division first 3s of 1951, 104.80 and for collateral trust 4s of 1952, 109. Bonds covered by accepted tenders are deliverable during the period December 21-28, inclusive.

NORTHERN PACIFIC.—*New Director.*—Robert S. Macfarlane, vice-president of the Northern Pacific at Seattle, Wash., has been elected a director of that road. In the *Railway Age* of December 8, Mr. Macfarlane was erroneously referred to as being connected with the Chicago, Milwaukee, St. Paul & Pacific.

SOUTHERN.—*Acquisition.*—The Interstate Commerce Commission has set for hearing this company's application for authority to acquire the stock of the Atlanta & Charlotte Air Line. It holds an option to purchase 15,719 shares at \$250 per share, and will offer the same price for the additional 1,281 shares. (Previous item in *Railway Age* of December 8, page 957.)

SOUTHERN PACIFIC.—*Reduction in Interest Charges.*—This road has announced that in response to invitations to submit for sale to the Central Pacific Railway Company its first refunding mortgage bonds, due August 1, 1949, the Central Pacific has accepted tenders aggregating \$17,987,000 principal amount of bonds. The average price at which accepted bonds were tendered was approximately 110.787 per cent. Including this operation, unmatured funded debt in the hands of the public, excluding equipment obligations, of the Southern Pacific Transportation System and separately-operated solely-controlled companies at December 31, 1945, will amount to approximately \$481,015,000, a reduction since December 31, 1939, of \$234,733,000, or 32.8 per cent. By this retirement, annual interest charged will be reduced by approximately \$719,000 and will total approximately \$21,292,000, a decrease of \$9,746,000, or 31.4 per cent since December 31, 1939.

Dividends Declared

Cayuga & Susquehanna.—80¢, payable January 2 to holders of record December 21. **Chicago Great Western.**—5% preferred, accumulative, 62½¢, payable December 28 to holders of record December 18.

Detroit Hillsdale & South Western.—Semi-annually, \$2, payable January 5 to holders of record December 20.

Elmira & Williamsport.—7% preferred, semi-annually, \$1.60, payable January 2 to holders of record December 20.

Little Schuylkill Navigation, Railroad, and Coal.

Semi-annually, 75¢, payable January 15 to holders of record December 15. **New York, Chicago & St. Louis.**—\$6 preferred A, accumulative, \$3, payable January 2 to holders of record December 17.

Pere Marquette.—5% prior preferred, accumulative, \$1.25, payable February 1 to holders of record January 7.

Tennessee, Alabama & Georgia.—10¢, payable December 20 to holders of record December 10.

Wheeling & Lake Erie.—75¢, payable December 27 to holders of record December 22.

Average Prices Stocks and Bonds

		Last Dec. 11 week	Last year
Average price of 20 representative railway stocks	62.56	63.22	45.75
Average price of 20 representative railway bonds	92.50	100.27	101.04

Railway Officers

EXECUTIVE

J. W. Severs, whose election to vice-president and comptroller of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters in Chicago, was reported in the *Railway Age* of December 8, was born at Alexis, Ill., on December 26, 1890. He



J. W. Severs

entered railway service in 1912 as a clerk of the Chicago & North Western at Chicago, and in 1914 he was advanced to division accountant. In 1917 Mr. Severs went with the Milwaukee as a traveling accountant, with headquarters at Chicago, later being promoted to auditor of expenditures and to assistant comptroller, with the same headquarters. In 1939 he was advanced to assistant to the trustee, while still retaining his duties as assistant comptroller. In January, 1945, he was promoted to executive assistant and comptroller, the position he held at the time of his recent election.

Eugene B. Finegan, whose election to vice-president of traffic of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, was reported in the *Railway Age* of December 8, was born at Iron Ridge, Wis. He entered railway service in September, 1899, with the Chicago, St. Paul, Minneapolis & Omaha, subsequently holding various minor positions on that road, and on the Great Northern, until 1903. Mr. Finegan's long service with the Milwaukee began in April, 1904,

as a stenographer at St. Paul, Minn. Two years later he was assigned to Chicago, where he has remained. From November, 1906, to April, 1916, he served successively as chief clerk to the assistant general freight agent, the general freight agent, traffic manager and vice-president. On the latter date he was promoted to chief



Eugene B. Finegan

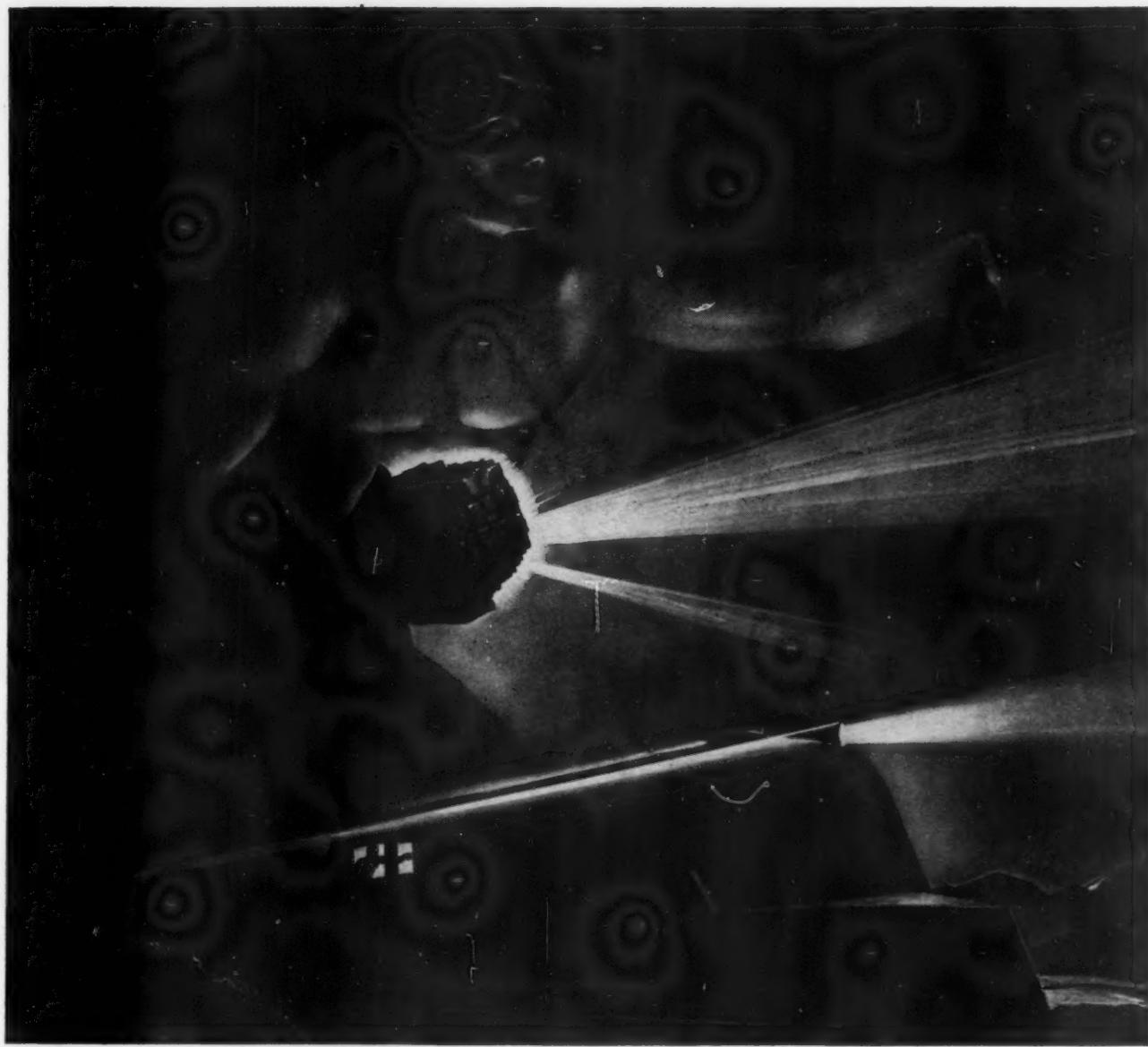
of the tariff bureau, in which capacity he served until February, 1917, when he was advanced to assistant general freight agent. In April, 1922, he was further advanced to general freight agent, and in June, 1925, he was promoted to assistant freight traffic manager. In January, 1927, Mr. Finegan became freight traffic manager, and on May 1, 1938, he was promoted to assistant chief traffic officer. In November, 1938, he was further advanced to chief traffic officer, the position he held at the time of his new appointment.

James T. Gillick, whose election to vice-president in charge of operations of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters in Chicago, was reported in the *Railway Age* of December 8, was born on June 1, 1870, at Glenco, Minn., and entered railway service on



James T. Gillick

the Milwaukee at the age of 15. Shortly thereafter he became a telegraph operator and in 1890 he was advanced to train dispatcher. He served in the latter capacity and as chief dispatcher until 1903 when he was promoted to trainmaster at Perry, Iowa. In 1906 Mr. Gillick was promoted



Tomorrow

Today's coal-burning locomotives possess 50% greater tractive power than the iron horses of twenty-five years ago.

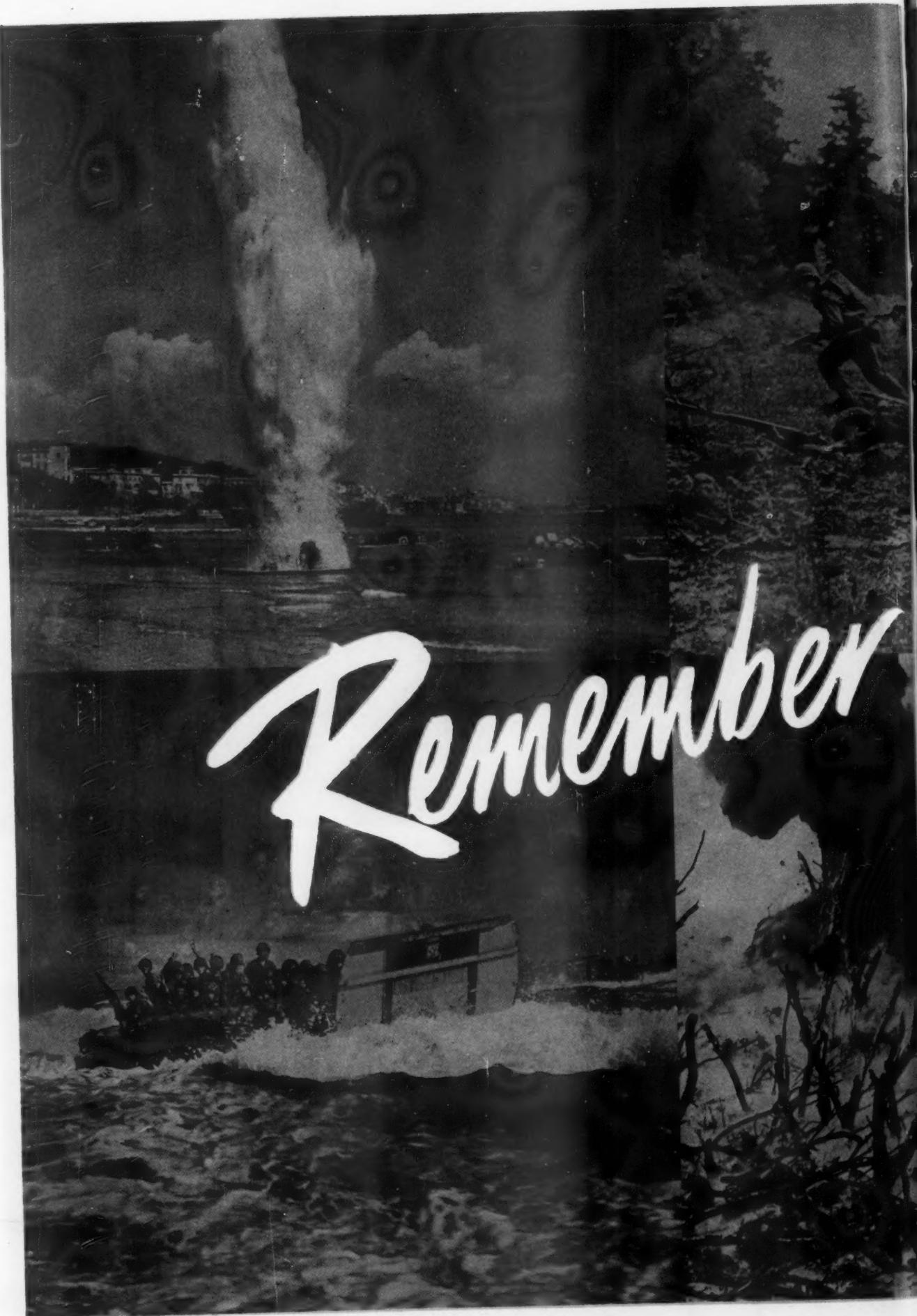
There is every indication that tomorrow's coal-burning locomotives will provide the greatest tractive effort of any kind of motive power per unit of weight and cost.

THE
SUPERHEATER
COMPANY

Representative of AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
122 S. Michigan Ave., CHICAGO

Montreal, Canada, THE SUPERHEATER COMPANY, LTD.

Superheaters • Superheater Pyrometers • Exhaust Steam Injectors • Steam Dryers • Feedwater Heaters • American Throttles





Kasserine Pass, Anzio, Saint-Lô, the Remagen Bridge...

Guadalcanal, Attu, Bougainville, Tarawa, Iwo, Okinawa...

Remember?

Already, the names grow a little hazy to some of us. But men died there, and more were hurt, and some managed to come through.

They had a tough job to do...and they did it. *You remember.*

There's something called a debt we owe...to several million men who finished the biggest job this country ever tackled...

A debt to men who fought and were wounded—and still need the best medical attention in the world. To men who are scattered all over the globe—and still need return-trip tickets. To men who are coming out of uniform—and need a hand to get started again.

You can help pay our debt to these men—by buying Victory Bonds. Bonds—not to give them weapons this time, but to give them back their world. That's the job *you're* asked to finish—by buying extra bonds for the last time.

Kasserine Pass...Anzio...Okinawa...

How good is your memory?

Victory Loan

*They Finished Their Job
Let's Finish Ours!*

**CONTRIBUTED BY
AMERICAN LOCOMOTIVE COMPANY**

to superintendent, with headquarters at Des Moines, Iowa, later being transferred to Aberdeen, S. D., where he remained until 1913, when he was advanced to assistant to the general manager with headquarters at Chicago. He was promoted to assistant general manager at Chicago on July 1, 1917, and on November 1 of the same year he became general manager of the lines east of Mobridge, S. D., with headquarters as before at Chicago. In November, 1925, Mr. Gillick was promoted to chief operating officer of the Milwaukee, with headquarters at Chicago, and in April, 1928, he was elected vice-president in charge of operations. In 1935 he again became chief operating officer, the position he held at the time of his new appointment.

A. N. Whitlock, whose election to vice-president and general counsel of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, was reported in the *Railway Age* of December 8, was born at Richmond, Ky., on September 1, 1887, and attended the University of Kentucky, receiving the degree of A. B. in 1906 and that of M. A. in 1908, and obtained his legal training at the Harvard Law School from which he graduated in 1911. After a short period in New York,



A. N. Whitlock

he moved to Missoula, Mont., to affiliate with the law school of the University of Montana. Continuing his law school connection he entered general practice, in 1912, and in 1917, he became a member of the firm of Murphy & Whitlock at Missoula. As a member of this firm, Mr. Whitlock was appointed local attorney for the Milwaukee in 1917, and solicitor for Montana in 1921. In April, 1935, he was promoted to general attorney with headquarters at Seattle, Wash., and in July, 1939, he was advanced to general counsel for the trustees, the position he held at the time of his new appointment. During the period from 1915 to 1919, Mr. Whitlock was dean of the law school at the University of Montana and for many years he was a member of the Montana State Board of Law Examiners.

H. A. Ross, general manager of the Pittsburgh & West Virginia at Pittsburgh, Pa., has been elected vice-president and secretary of the company. **L. G. Walker** has been elected vice-president—operations and maintenance.

Fred L. Schrader, vice-president of the Chicago & Illinois Midland at Springfield, Ill., has been elected president, with the same headquarters, succeeding **William C. Hurst**, who has retired after 55 years of service.

FINANCIAL, LEGAL AND ACCOUNTING

Paul S. Young, assistant land agent for the Bessemer & Lake Erie at Pittsburgh, Pa., has been advanced to real estate and tax agent there.

Charles P. Platt, auditor of financial paper settlements for the Railway Express Agency at New York, has retired after nearly 56 years' service.

Robert Sears Garnett has been appointed assistant general solicitor of the Chesapeake & Ohio and the New York, Chicago & St. Louis, with headquarters at Cleveland, Ohio.

Edward H. Murnane has been appointed attorney of the Minneapolis, St. Paul and Sault Ste. Marie for the state of Illinois, with headquarters at Chicago, succeeding **John L. McInerney**, whose death on November 21 is reported elsewhere in these columns.

Lewis A. Mamgren, whose retirement as auditor of passenger receipts of the Great Northern was reported in the *Railway Age* of December 1, was born at Young America, Minn., on July 10, 1878, and entered railway service on June 1, 1893, as a clerk in the office of the auditor of passenger receipts at St. Paul, Minn. In 1902 he was promoted to chief clerk of the same department, and on August 1, 1918, he was promoted to the position he held at the time of his retirement.

H. S. Latham, whose promotion to treasurer of the Northern Pacific, with headquarters at St. Paul, Minn., was reported in the *Railway Age* of December 8, was born at Pekin, Ill., on January 7, 1902, and is a graduate of the University of Minne-

1926 Mr. Latham was awarded a Strathcona scholarship at Yale University, where he studied railroad transportation and, after earning his master's degree the following year, he returned to the Northern Pacific and was assigned to the accounting department. On October 1, 1937, he was promoted to assistant to the general auditor at St. Paul, and in 1944 he was further advanced to assistant treasurer, the position he held at the time of his new appointment.

Phineas B. Lacy, whose retirement as treasurer of the Northern Pacific, with headquarters at St. Paul, Minn., was reported in the *Railway Age* of December 8, was born at Hudson, Wis., on April 14, 1880, and entered railway service on December 1, 1905, as a clerk in the land department of the Northern Pacific. He later served as cashier in the land department and then as assistant to the land commissioner. During federal control of the railroads, Mr. Lacy became corporate cashier, and in 1920 he was promoted to assistant treasurer at St. Paul. In March, 1928, he was advanced to the position he held at the time of his retirement.

Jerome C. Sladek, whose promotion to auditor of passenger receipts of the Great Northern, with headquarters at St. Paul,



Jerome C. Sladek

Minn., was reported in the *Railway Age* of December 1, was born at St. Paul on March 14, 1882. He attended the University of Minnesota and after leaving school entered railway service in the auditing department of the Great Northern at St. Paul, subsequently holding various minor positions until he was promoted to chief clerk of the passenger receipts auditing department, the position he held at the time of his new appointment.

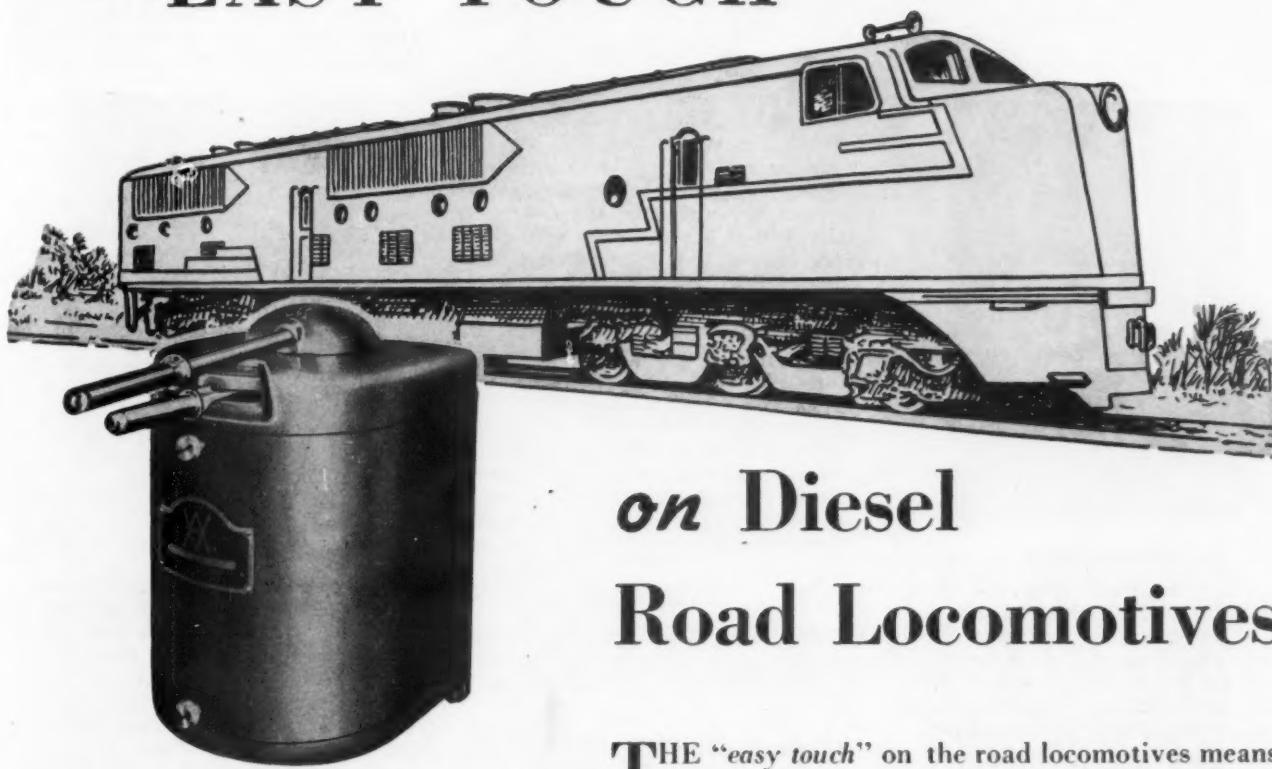


H. S. Latham

sota. He entered railway service during summer school vacations by serving in the stores department of the Northern Pacific at Livingston, Mont., and upon graduating in 1923, he was appointed a special accountant, with headquarters at St. Paul. In

Arthur T. Mather, whose retirement as auditor disbursements of the Boston & Maine and the Maine Central was announced in the November 17 issue of *Railway Age*, was born on June 7, 1875, at Manchester, England. He entered railroading as a clerk with the Boston & Albany in 1898, then joined the Boston & Maine in 1900 as a disbursements clerk. He was advanced to assistant chief clerk roadway accounts in 1906 and to chief clerk engineering department in 1913. He became traveling accountant in 1914, special assistant in 1923, and general stores

How to Put the "EASY TOUCH"

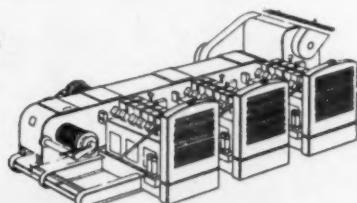


on Diesel Road Locomotives

THE "easy touch" on the road locomotives means finer control of power and smoother starting by means of the pneumatic throttle. With the engine idling, setting up of electrical circuits and regulation of engine speed are governed by the control handle. In the starting zone, engine speed is held constant and the field resistance cut out gradually until full power intensity is applied.

As the handle is advanced further, the pneumatic throttle cuts in and increases engine speed progressively. Operation is interlocked with the reverser handle so that the reverser cannot be moved to change direction unless the control handle is moved to "off" position. Smooth starting, precise engine control and direction interlocking are characteristic of the pneumatic throttle—single handle control.

The pneumatic throttle, as used on all classes of steam and Diesel locomotives, has demonstrated a wide utility for stationary and marine Diesels. An interesting application is on oil rigs where three Diesels work together on hoisting operations. The pneumatic throttle synchronizes engine output by maintaining balanced fuel supply to all three engines.



WESTINGHOUSE AIR BRAKE CO.

WILMERDING, PENNSYLVANIA

accountant in 1926. Mr. Mather was promoted to the position of auditor disbursements in May, 1927, and maintained this post until his retirement on October 31.

Earl F. Requa, whose promotion to assistant general counsel of the Northern Pacific, with headquarters at St. Paul, Minn., was reported in the *Railway Age* of December 1, was born at Everett, Wash., on July 26, 1904, and received his higher education at the University of Wash-



Earl F. Requa

ton. He entered railway service on November 15, 1937, as assistant western counsel of the Northern Pacific at Seattle, Wash., the position he held at the time of his recent promotion. During the period from 1930 to 1937, Mr. Requa was engaged in the private practice of law at Seattle.

Edward R. Prueter, chief clerk of the car accounting department of the Illinois Central at Chicago, has been promoted to acting car accountant, with the same headquarters, succeeding to the duties of **Arthur W. Stokes**, whose death on November 15 is reported elsewhere in this issue.

George T. McElroy, whose appointment as auditor disbursements of the Boston & Maine and the Maine Central at Boston, Mass., was announced in the No-



George T. McElroy

vember 17 issue of *Railway Age*, was born on March 29, 1882, at Lowell, Mass. He began his railway career in 1909 with the Boston & Maine as a clerk in the freight

office, transferring to the engineering department in 1911, where he was advanced to chief clerk in 1912. In 1914, Mr. McElroy was appointed to head the payroll accounts section of the accounting department, and in 1926, became special assistant in the accounting department, maintaining this position until his appointment as auditor disbursements on November 1, 1945.

OPERATING

T. J. Klauenberg, superintendent of the Wheeling division of the Baltimore & Ohio at Wheeling, W. Va., has been appointed superintendent of the Toledo division at Dayton, Ohio, succeeding **H. C. Batchelder**, who has retired after 42 years' service. **John J. Sell**, superintendent of the New York terminal lines at St. George, Staten Island, N. Y., has been named superintendent at Wheeling. **H. I. Walton**, terminal superintendent at Philadelphia, Pa., succeeds Mr. Sell as terminal superintendent at Staten Island. **Mark B. Van Pelt**, terminal trainmaster at Philadelphia, has been appointed terminal superintendent there. **William B. Weis**, terminal trainmaster, night, at Philadelphia, has become terminal trainmaster, while **R. S. Densmore** succeeds him as night terminal trainmaster.

TRAFFIC

W. G. Degelow has been appointed general freight agent of the St. Louis Southwestern, with headquarters at St. Louis, Mo.

Thomas Fuller has been named assistant to freight traffic manager of the Atlantic Coast Line at Wilmington, N. C. **C. D. Williams** has been named freight service agent at Tampa, Fla.

Charles G. Tryor has been appointed district passenger agent of the Western Pacific with headquarters at Sacramento, Cal., succeeding **Willard M. Workman**, who has been assigned to other duties.

Lloyd L. Smith, who has been on leave of absence to serve with the armed forces, has been appointed general agent of the Missouri Pacific, with headquarters in San Francisco, Cal.

Daniel S. Sundel, district traffic agent of the New York, New Haven & Hartford at Philadelphia, Pa., has been appointed general traffic agent there. **William F. Foley**, traffic representative at Philadelphia, has become assistant general traffic agent there.

George S. Scott, assistant division freight agent of the Atchison, Topeka & Santa Fe at Los Angeles, Cal., has been promoted to division freight agent, with headquarters at Long Beach, Cal., a newly-created position. Mr. Scott's appointment was made to coincide with the opening of Santa Fe freight service into Long Beach as reported elsewhere in this issue.

G. C. Lyman, division freight and passenger agent of the Atchison, Topeka & Santa Fe at El Paso, Tex., has been promoted to general freight and passenger agent, with headquarters at Albuquerque,

N. M., a newly-created position. **Richard J. Ward**, assistant division freight agent at Chicago, has been advanced to division freight and passenger agent at El Paso, succeeding Mr. Lyman.

William W. Fair, whose promotion to general passenger agent of the Texas & Pacific, with headquarters at Dallas, Tex., was reported in the *Railway Age* of December 1, was born at Bristol, Va., on November 4, 1888, and entered railway



William W. Fair

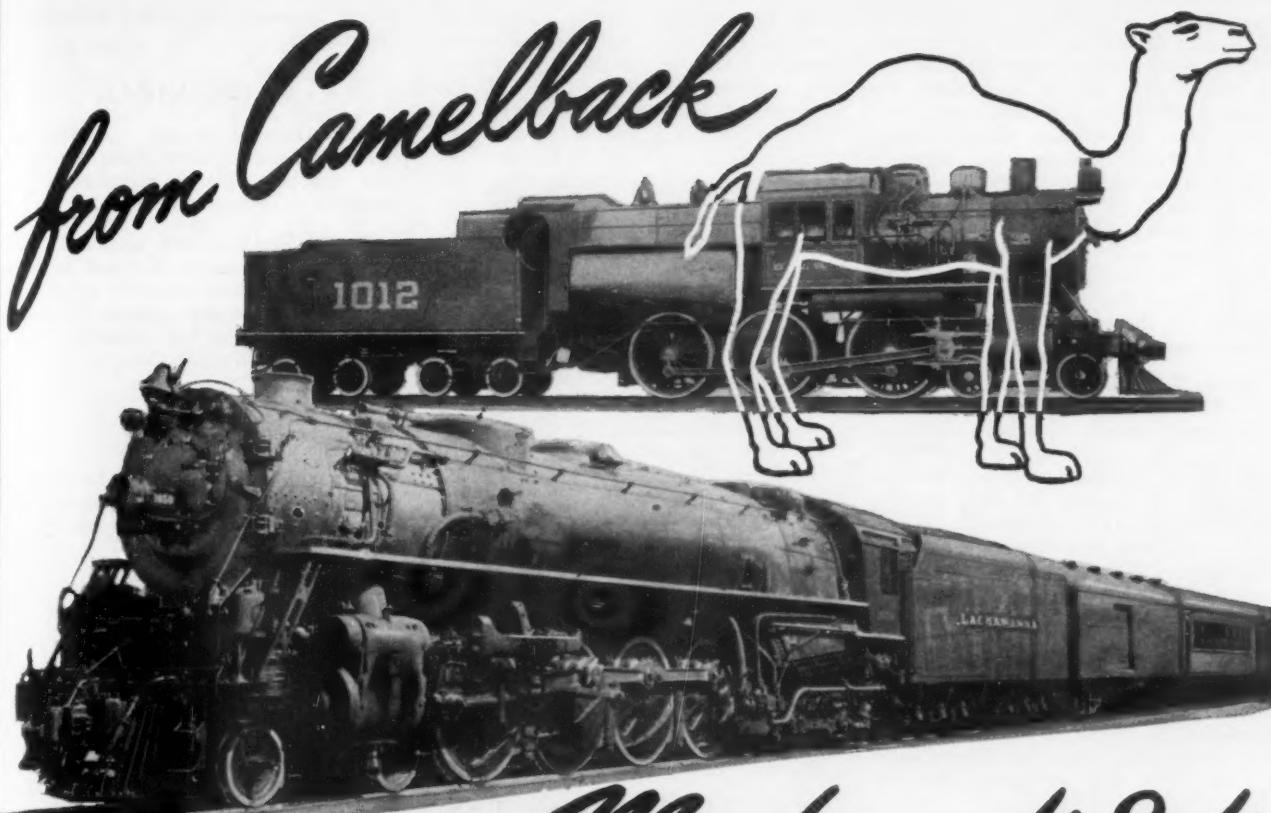
service on February 1, 1905, in the office of the auditor of passenger receipts of the T. & P. He held various positions in that department until 1920 when he was assigned to the passenger traffic department as a passenger clerk. In the same year he was promoted to chief rate clerk, and in March, 1922, he was advanced to assistant chief clerk. On June 26, 1924, Mr. Fair was further promoted to chief clerk, and on August 1, 1942, he became assistant general passenger agent, the position he held at the time of his new appointment.

Donald E. McKeithen, whose promotion to assistant freight traffic manager of the St. Louis-San Francisco, with headquarters at St. Louis, Mo., was reported in



Donald E. McKeithen

the *Railway Age* of November 24, was born at Otter Creek, Fla., on June 2, 1901, and entered railway service on April 15, 1923, as chief clerk of the Winston-Salem Southbound at Jacksonville, Fla. In September of the same year he went with the



to Modern 4-8-4

H S G I VITAL PARTS ON THE LACKAWANNA

Many are the differences between the Lackawanna "camelbacks" of a generation ago and present day 4-8-4's. Modern super-heat temperatures, for instance, impose vastly more severe requirements upon all valve and cylinder components. Nor is there hardly a condition of operation or maintenance the same as in 1910. Yet HUNT-SPILLER GUN IRON is the one material which the Lackawanna has continuously depended upon for bushings, packing, and other wearing parts of steam locomotives.

We are proud that the Lackawanna and 75 other Class I railroads have made the use of HUNT SPILLER GUN IRON standard practice for 35 years or more.



HUNT-SPILLER MFG. CORPORATION

N. C. RAYMOND, President

E. J. FULLER, Vice-Pres. & Gen. Mgr.

383 Dorchester Ave. ★ South Boston 27, Mass.

Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.

Export Agents:

International Rwy. Supply Co., 30 Church Street, New York 7, N. Y.

Cylinder Bushings
Cylinder Packing Rings
Pistons or Plain Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings

Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above,
Sectional Packing)
Cylinder Snap Rings
Valve Rings, All Shapes

St. Louis-San Francisco as chief clerk to the district freight agent and district passenger agent, with the same headquarters. On March 23, 1924, Mr. McKeithen was advanced to traveling freight agent, with headquarters at Atlanta, Ga., becoming traveling freight and passenger agent in October, 1928, with the same headquarters. On January 1, 1935, he was promoted to general agent at Winston-Salem, N. C., later serving in the same capacity at Jacksonville. Mr. McKeithen was transferred to Pittsburgh, Pa., on January 1, 1942, remaining in that location until his new appointment.

James L. Scales, whose promotion to assistant freight traffic manager of the St. Louis-San Francisco, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of November 24, was born in Tennessee on January 18, 1903, and entered railroad service on June 23, 1923, as a clerk with the St. Louis-San Francisco. He held several minor positions until January 1, 1932, when he became soliciting freight and passenger agent at Cleveland, Ohio. From April 30, 1934, to April 1, 1937, he served as chief clerk at Oklahoma City, Okla., being appointed on the latter date to traveling freight and passenger agent at Tulsa, Okla. On August 1, 1941, Mr. Scales was advanced to general agent at Little Rock, Ark., and served there un-



James L. Scales

til April 1, 1942, when he was promoted to assistant freight traffic manager at St. Louis, the position he was holding at the time of his recent promotion.

Joseph Hardin, who has been on leave of absence from the Kansas City Southern to serve in the armed forces, has returned to his former position of general agent, with headquarters at Tulsa, Okla. He replaces **Met J. Caldwell**, who has been appointed acting general agent at Texarkana, Tex., where he succeeds to the duties of **W. H. Larson**, general agent, who has been granted an extended leave of absence because of ill health.

ENGINEERING & SIGNALING

W. L. Young, whose appointment as principal assistant engineer of the Norfolk & Western at Roanoke, Va., was announced in the December 8 issue of *Railway Age*, began his career in the drafting

room of the Virginia Bridge & Iron Company in 1918. He later served several years as draftsman, designer and construction engineer for the Atlantic Bridge Company, Greensboro, N. C. He went with the Norfolk & Western in 1924 as a



W. L. Young

draftsman, and was advanced to crossing engineer in 1930. Mr. Young became bridge engineer at Roanoke in 1941, and maintained this position until his recent promotion.

PURCHASES AND STORES

B. E. Leech, assistant general storekeeper of the Bessemer & Lake Erie at Greenville, Pa., has been advanced to general storekeeper, succeeding **Robert McAndrew**, whose death was reported in the December 1 issue of *Railway Age*.

SPECIAL

William W. Martin, superintendent of public relations for Railway Express at New York, has been appointed superintendent of training there. Mr. Martin was born in Albany, N. Y. He served as a captain of infantry in the United States Army in World War I, and entered the ex-



William W. Martin

press business in 1922. During his career he has served Railway Express Agency as route agent, supervisor vehicle department, general agent at Newark, N. J., special representative attached to the general manager's office at Philadelphia, Pa., and then

district manager of public relations at Philadelphia.

MECHANICAL

B. C. Gonnell, recently honorably discharged from the United States Army, has been appointed Diesel engineer for the Southern at Washington, D. C.

Harold W. Wreford, electrical supervisor for the Canadian National at Montreal, Que., has been appointed chief lighting inspector for the system, succeeding **G. F. Shaw**, who has resigned to join the Vapor Car Heating Company at Montreal.

OBITUARY

Arthur W. Stokes, car accountant of the Illinois Central, with headquarters at Chicago, died in a hospital in that city on November 15.

Frank G. Jonah, chief engineer of the St. Louis-San Francisco, with headquarters at St. Louis, Mo., died in a hospital in that city on December 7.

G. A. Haskins, engineer maintenance of way of the Akron, Canton & Youngstown, whose death was reported in the December 1 issue of *Railway Age*, was born on September 29, 1891, at North Adams, Mass.



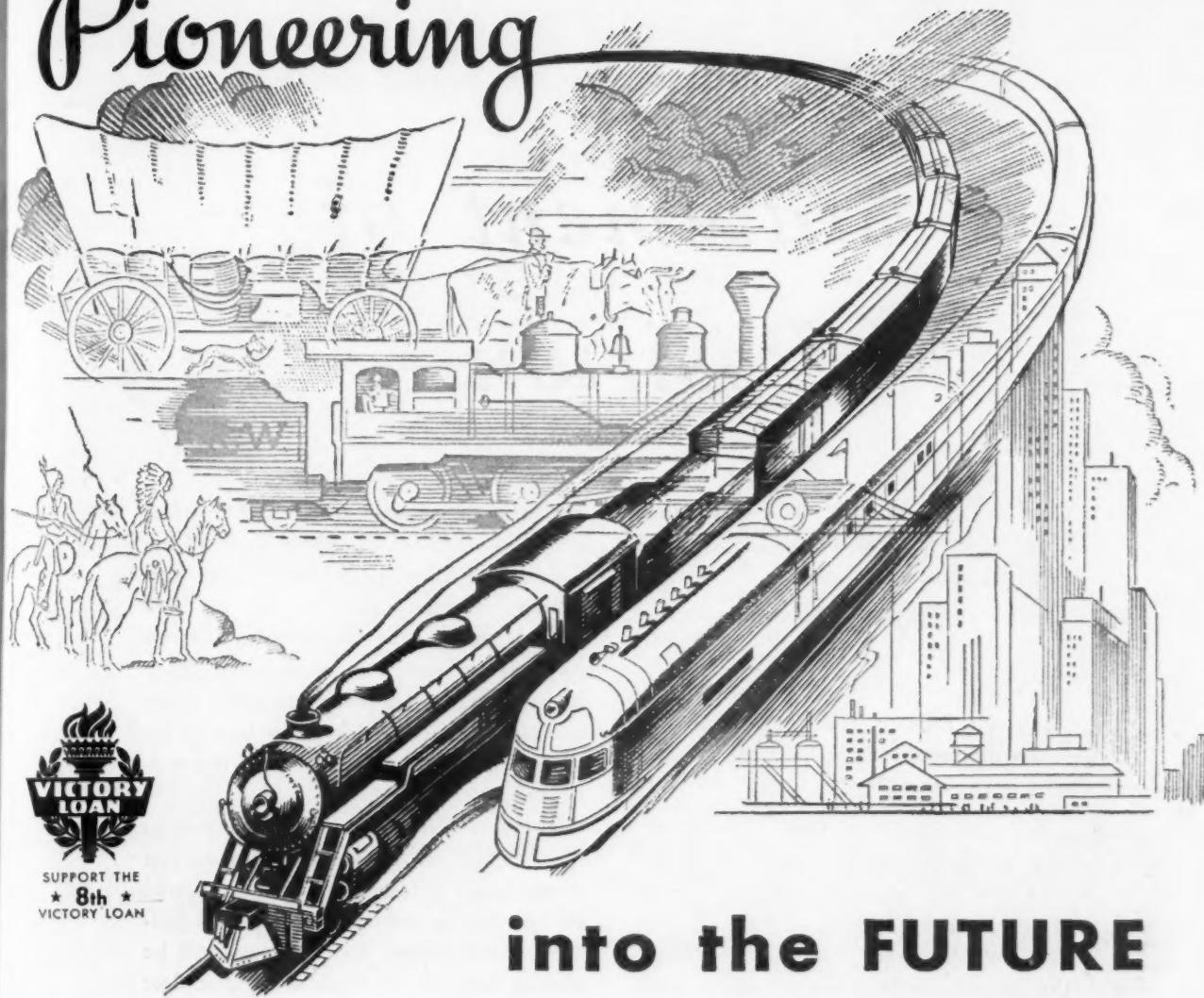
G. A. Haskins

He began his railway career with the Boston & Maine in 1919 as a chainman in the engineering department. He became resident engineer in 1927, and assistant engineer in 1929. In 1933, he was appointed assistant track and bridge and building supervisor at Brattleboro, Vt., and North Adams, Mass. Mr. Haskins joined the Akron, Canton & Youngstown in 1937 as division engineer, and was promoted to engineer maintenance of way in February, 1944.

Ralph C. Miller, comptroller for the Pennsylvania at Philadelphia, Pa., died there on December 11, after 44 years with the railroad.

John L. McInerney, attorney of the Minneapolis, St. Paul & Sault Ste. Marie for the state of Illinois, with headquarters at Chicago, died in that city on November 21.

Pioneering



SUPPORT THE
★ 8th ★
VICTORY LOAN

into the FUTURE

Katy's 75 years are packed with pioneering... a stirring saga of iron men blazing an iron trail to a new frontier. This year the Katy celebrates the Diamond Anniversary of that day 75 years ago when two flimsy rails first pushed their way from the north into Indian Territory and the great Southwest.

But for both the Katy and the Southwest there is more pioneering ahead than behind. A greater destiny is still to come... greater cities lifting monuments of steel and stone to the skies... greater industries pouring forth the goods of peace... a greater people, loyal to Southwestern tradition, carrying the glory of "God's Country" to greater heights.

All these served by a great railroad... *the Katy of the Future!* Today the Southwest's "Home Town Railroad" is geared to project its 75 years of

pioneering into a train of even more prosperous Tomorrows... a completely modernized transportation system with all equipment in apple-pie order... ultra-modern streamlined passenger trains and diesel freight locomotives soon to come... hundreds of new automobile, hopper and freight cars now building, and a young, vigorous, experienced personnel, from top executives to call boys, with the pioneering urge strong in their veins, eager to make the future of both road and region greater than the past.

Yes, big things are "cookin'" on the Katy... bigger than have ever come out of the past... *a new and greater Southwest served by a new and finer Katy.*

When you ship or travel to or from the Southwest, remember Katy.



279

MISSOURI • KANSAS • TEXAS RAILROAD SYSTEM

Statement of Position—

Until the present tight steel situation is eased, there will be an unbalanced condition in all steel stocks.

There are three principal reasons for this:

1. Labor and coal shortages are currently lowering steel production.
2. Every industry is anxious to get on with reconversion and peacetime production.
3. There is a tremendous backlog of maintenance and repair requirements.

Ryerson stocks, largest in the nation, reflect current conditions. And because of the great load, it is not always possible to supply the desired steel or deliver available steel as quickly as usual. But we are doing everything we can to satisfy every customer's requirements.

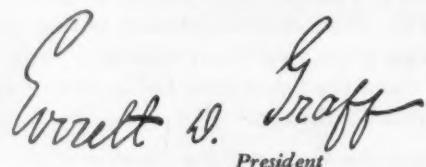
When a certain kind or size of steel is not immediately available, every effort is made to suggest satisfactory alternates which buyers may use with confidence.

Ryerson's 103 years of experience in maintaining large and complete stocks

and working closely with all industries, makes the recommendations of Ryerson metallurgists and engineers particularly practical and helpful.

We thank our customers for their courtesy and patience, for the confidence they have placed in our judgment when alternates for wanted steels have had to be offered, and for understanding our position.

Ryerson will continue to serve you to the best of its ability from its eleven strategically located plants. Stocks will be brought to normal as quickly as possible. This means that Ryerson will be among the first to have more complete stocks of present scarce steels—that Ryerson will continue to be the largest stock source for steel in the country.

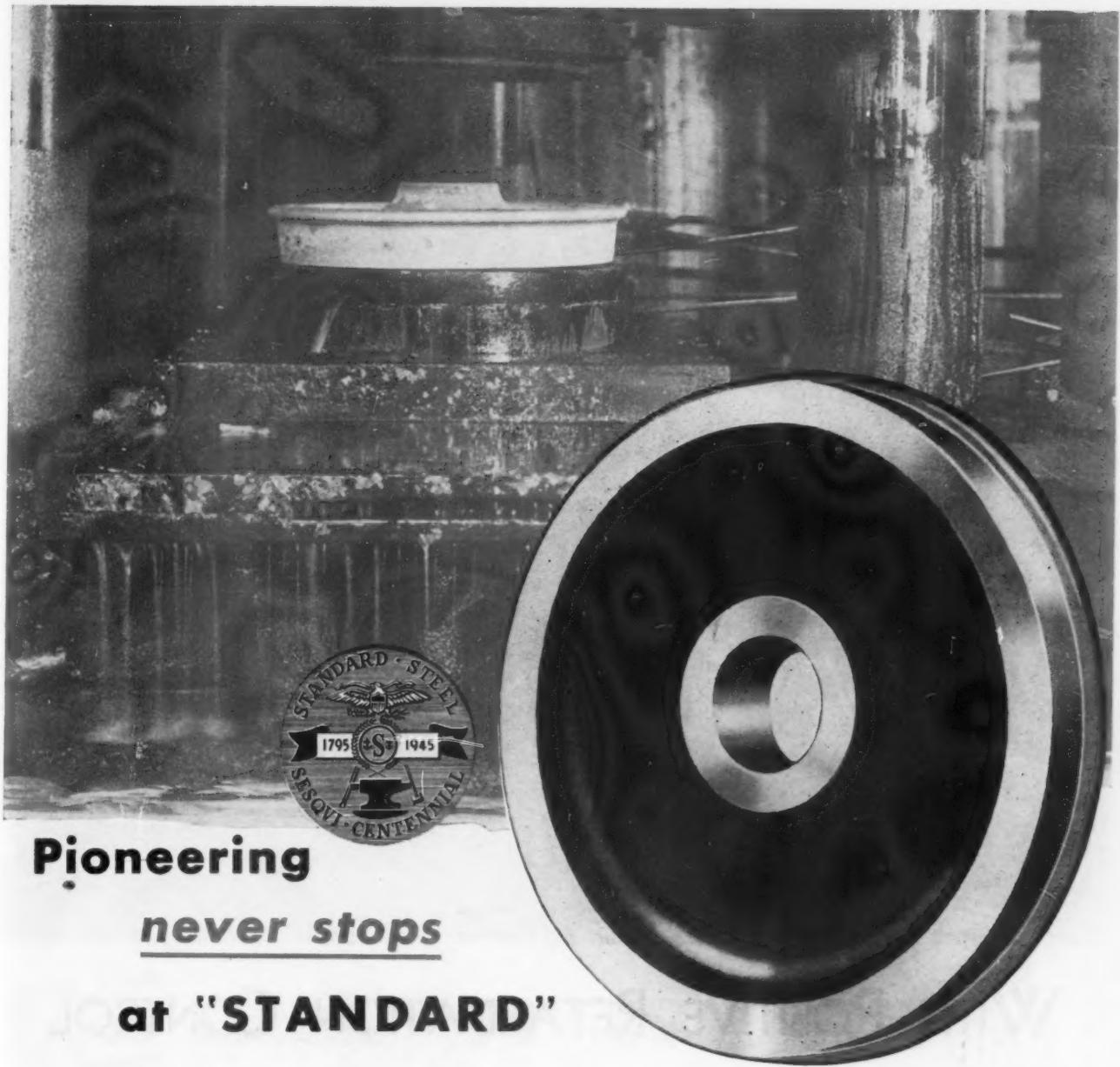


Everett V. Graff
President

JOSEPH T. RYERSON & SON, INC.

RYERSON STEEL

Steel-Service Plants at: Chicago, Milwaukee, Detroit, St. Louis, Cincinnati, Cleveland, Pittsburgh, Philadelphia,
Buffalo, New York, Boston



Pioneering
never stops
at "STANDARD"

Ever since the turn of the century, Standard pioneering has been focused on producing wheels to meet steadily tougher service conditions.

In 1904 the pioneer contribution was a wheel rolled so that the axis of the ingot was the axis of the wheel. Today, the pioneer contribution is the *heat treated* wheel, with definite control of rate of cooling after final shaping. The result — high strength, that resists breakdown under high operating loads and modern speeds.

"Standardize on Standard" is an excellent

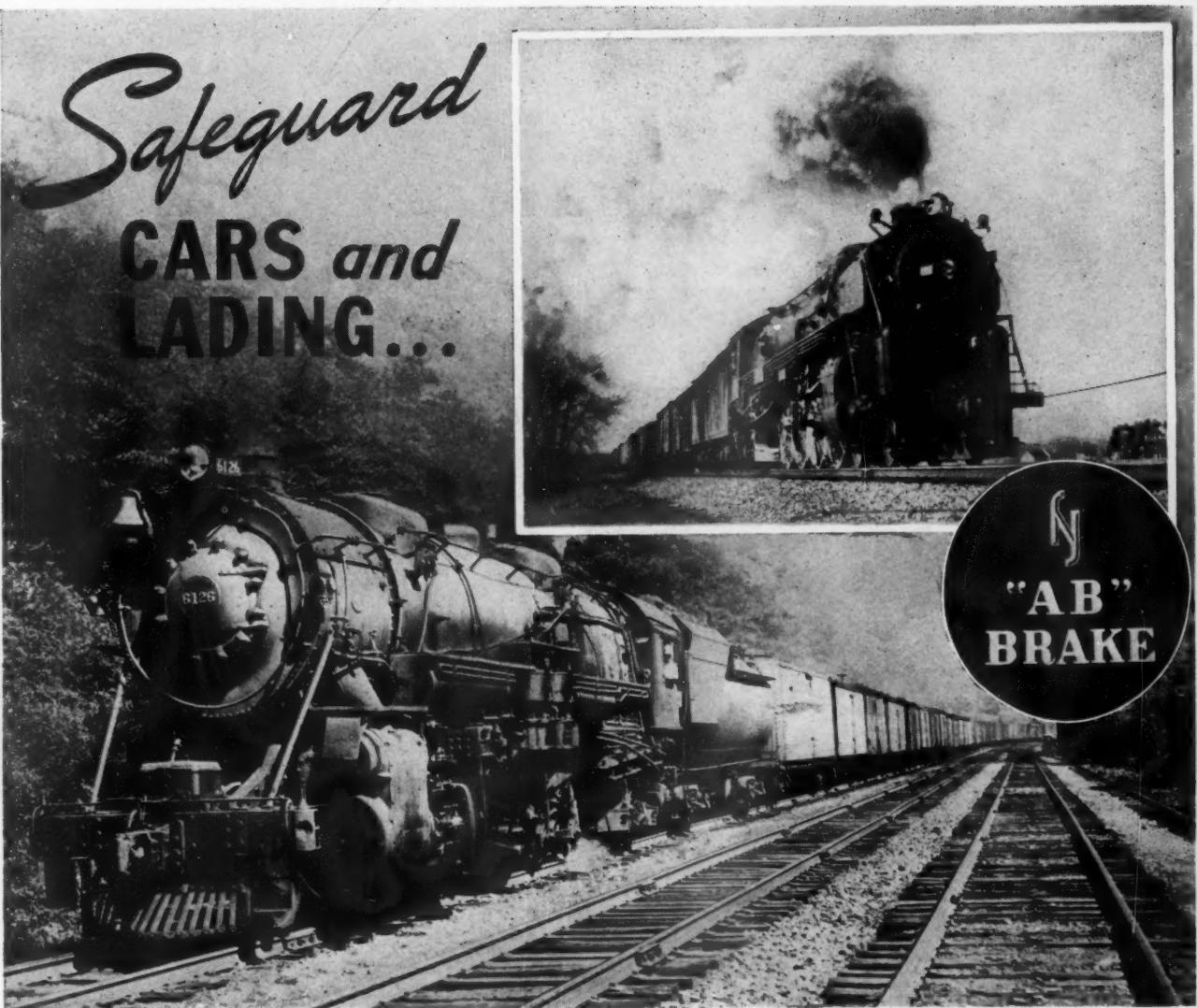
way of solving your wheel problems.

The Baldwin Locomotive Works, Standard Steel Works Division, Burnham, Pa. Offices: Philadelphia, New York, Boston, Chicago, St. Louis, Cleveland, Washington, San Francisco, Detroit, Houston, Pittsburgh, Birmingham.



BALDWIN
STANDARD

STEEL FORGINGS & CASTINGS



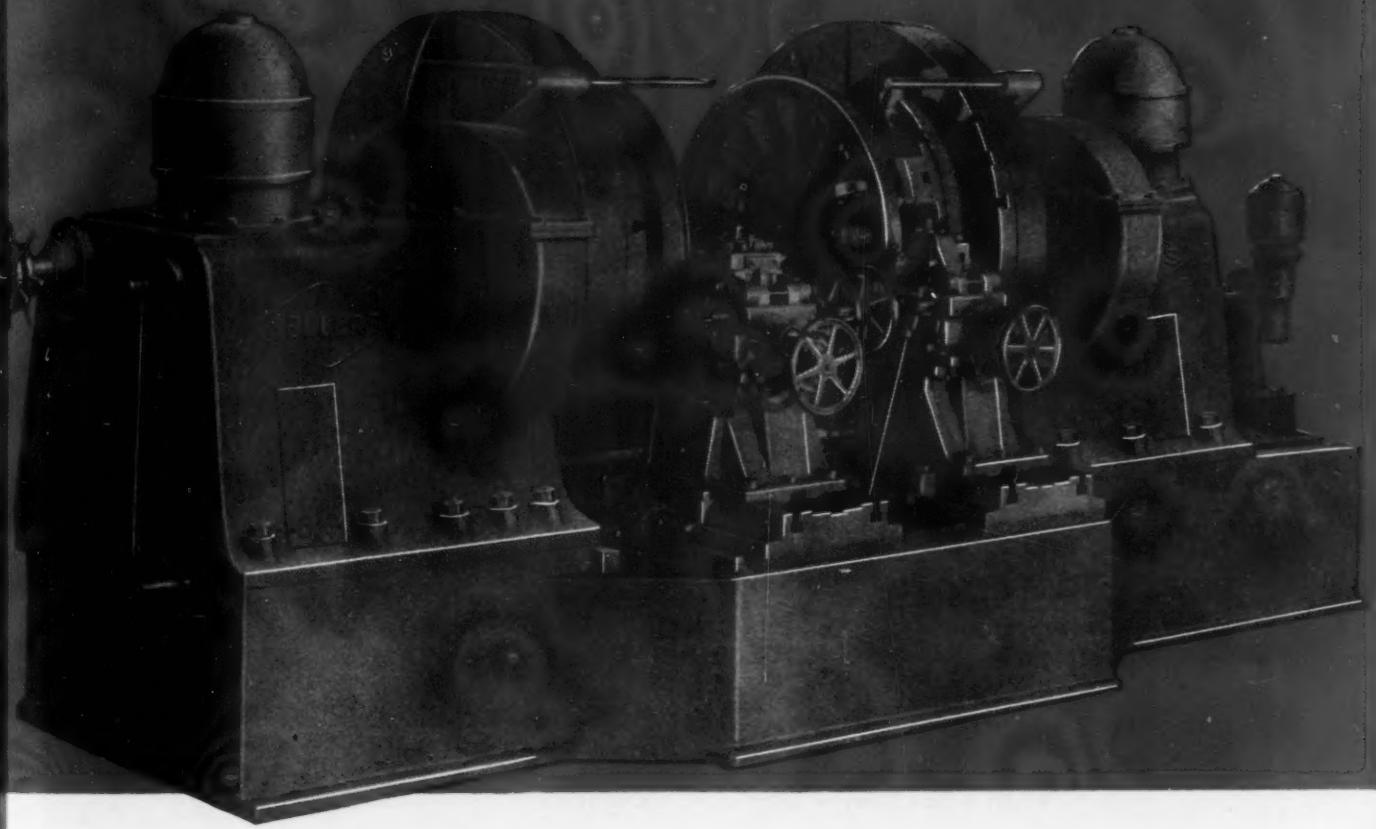
WITH POSITIVE RETARDATION CONTROL

THE faster, more positive and more effective "AB" Brake not only has made possible higher speeds and heavier tonnage trains, but is proving a vital factor in safeguarding cars and lading en route. Careful analysis of operating records will show that the smoother and safer handling of fast freight trains made possible by the "AB" Brake has helped to reduce damage claims and maintenance costs.

Complete standardization of the "AB" Brake offers unusual opportunities for further progress in securing greater utilization and higher availability of rolling stock and a general all-round improvement in operating efficiency.

The New York Air Brake Company
420 Lexington Ave., New York 17, N.Y. Plant: Watertown, N.Y.

Announcing . . .



THE SELLERS 90" DUAL DRIVE ENGINE DRIVING WHEEL LATHE

75 YEARS AGO (that's before your time) America's infant railroads and locomotive builders depended on Sellers lathes to true their engine driving wheels. These tools, though crude and slow, were the best available, and played no small part in the rapid growth of the world's greatest transportation system.

Today Sellers presents a Dual Motor Engine Driving Wheel Lathe of such accuracy and ease of operation that it has no counterpart in performance. Details of its design, capacity and operational features will gladly be sent you on request.

Wm. SELLERS & COMPANY
1631 HAMILTON STREET • PHILADELPHIA

SELLERS PRECISION TOOLS SINCE 1848

BUILT FOR HARD WORK



and equipped with these desirable features

- STAIRWELLS AT ALL FOUR CORNERS
- ONE PIECE CAST STEEL TRUCKS
- SAFETY-TREAD DECK SURFACES
- FORCE VENTILATED TRACTION MOTORS
- ANTI-SLEWING DEVICE FOR TRUCKS
- EASY ACCESS TO ALL PARTS—
- REQUIRING MAINTENANCE AND INSPECTION
- DRY SUMP LUBRICATION

FOR AVAILABILITY, ECONOMY and POWER FOR THE JOB
IT'S WHITCOMB

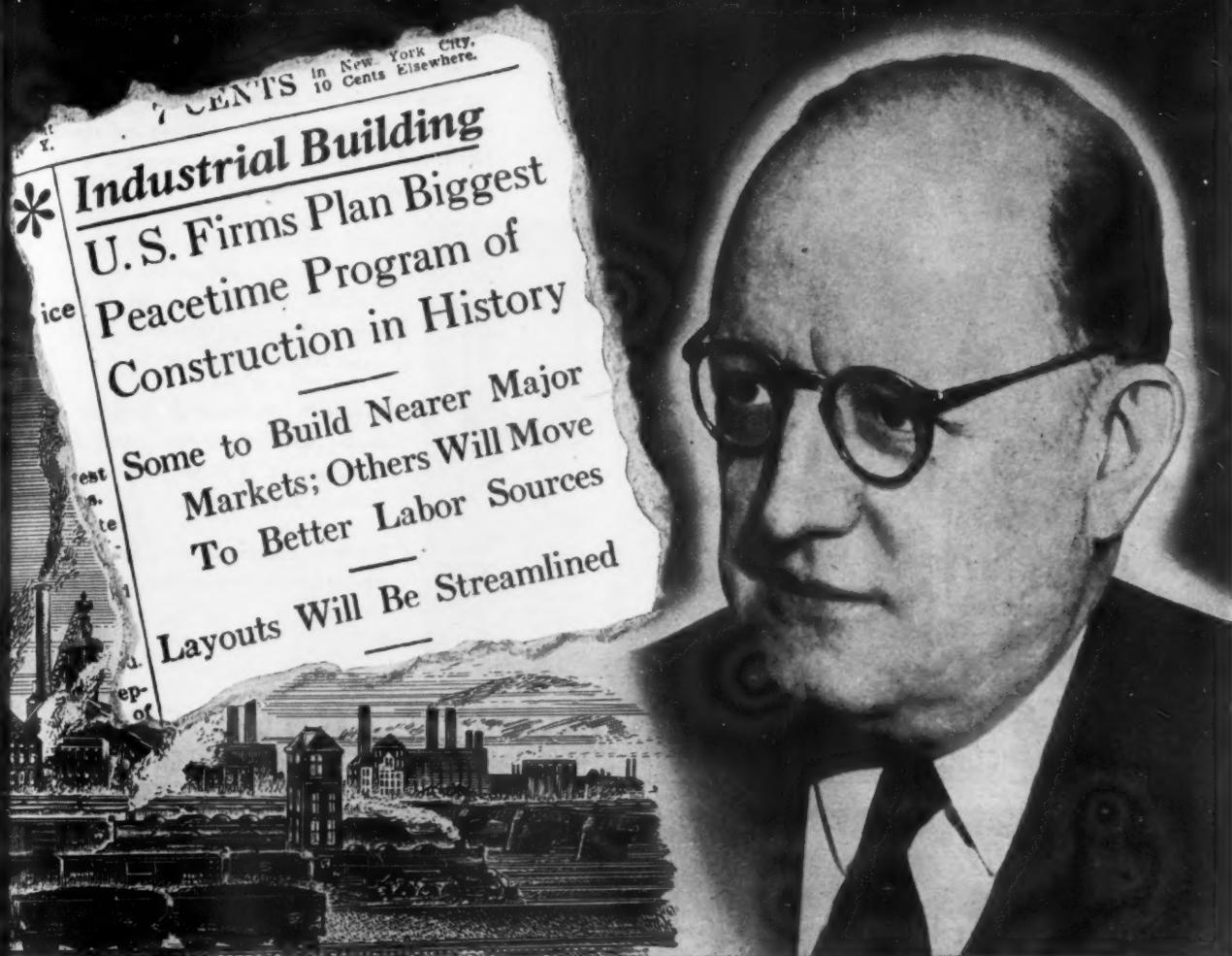


THE WHITCOMB LOCOMOTIVE CO.

Subsidiary of

ROCHELLE, ILL.
THE BALDWIN LOCOMOTIVE WORKS

HEADLINES and HEADLINERS



W. W. HALE, Vice Pres. System Freight Traffic, Southern Pacific Co.

"**F**ORTUNATELY, far-sighted pioneering in transportation is an American characteristic. It is one reason why America's railroads were able to do a job which to many, seemed impossible before Pearl Harbor. The Wall Street Journal has

reliably informed many top railroad men of my acquaintance for years. As a long time reader I continue to be impressed by its comprehensive analysis of business news in the making."

wwhale

THE WALL STREET JOURNAL

NEW YORK, TUESDAY, NOVEMBER 16, 1948

7 CENTS

Juggling Markets
Rail Rate Reforms to Alter Many Industries' Competitive Positions

What's News

Industrial Chemicals

Commodity Letter
A Special Staff Report on Price and Production Trends Affecting Industries

Friction Fighters
New Lubricants to Help Tomorrow's Automobiles

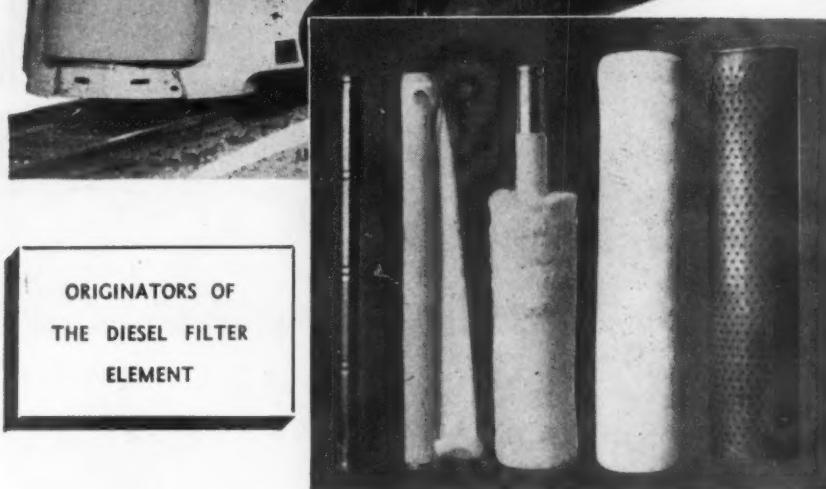
The ONLY National Business Daily
Published simultaneously on both coasts

Customers Come to Admire

*Like most important business news, this story appeared first in The Wall Street Journal. That's why this national daily is "must" reading for business men who need to be fully, accurately and quickly informed. And that's what provides such an unusually responsive audience for advertisers.



A Better Lubricating Oil FILTER for Diesels



The design and manufacture of the M&J sock-type lubricating oil filter assures more reliable diesel engine operation with reduced hot bearings, increased mileage between oil changes, minimum time for cleaning and repacking oil filters, and no damage to oil filter or screen as the M&J unit slips easily into place.

Seven pounds of clean, high-grade white cotton thread are evenly packed by machine into the white, knitted cotton sock so that a uniform and superior filter action occurs for the entire length of the unit.

Completely eliminates all removable and permanent screens from filter container, thereby saving upward of 50 per cent on cost of repairs and new purchases.

For more economical, more satisfactory diesel lubricating oil filter service install M&J filter elements.

M & J DIESEL LOCOMOTIVE FILTER CO.
224 S. MICHIGAN AVENUE

CHICAGO 4, ILLINOIS

Ask Our
ENGINEERS

to solve your weighing problems

Streeter-Amet engineers are technically experienced in railroad weighing problems. They will study your situation and make recommendations without charge.

Should you require automatic weight recording equipment these engineers will be responsible for its planning, installation, and satisfactory operation. A Streeter-Amet installation can be made for every railroad need in automatic weight recording.

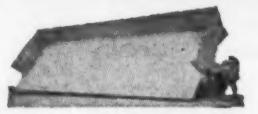
STREETER-AMET COMPANY

4103 North Ravenswood Avenue • Chicago 13, Illinois
Automatic Weighers, Recorders, Scales and Services • Founded 1888

STREETER-AMET



AIR DUMP CARS



**RAIL CARS
MINE CARS
AND
LOCOMOTIVES**



**AXLESS TRAINS
COMPLETE HAULAGE SYSTEMS**

DIFFERENTIAL STEEL CAR CO.
FINDLAY, OHIO

HYMAN-MICHAELS COMPANY

Relaying Rails ★ ★ ★ **Dismantling**
Used railroad equipment—cars—locomotives

Freight Car Replacement Parts
Complete stocks of guaranteed used freight car parts carried on hand by us at all times. Located conveniently for shipment to any part of country. Write — Phone — Wire — when interested in used Rails, Equipment, Cars, Car or Track Dismantling, or Car Parts.

Main Office
**122 SOUTH MICHIGAN AVENUE
CHICAGO, ILLINOIS**

**New York
St. Louis
SERVICE**

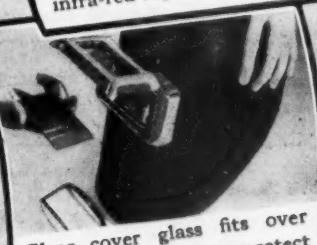
**San Francisco
Los Angeles
QUALITY**

**Houston
Havana, Cuba
RELIABILITY**

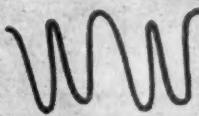
Let Willson-Weld Glass
Guard Your Welders' Eyes



Formula for welding eye safety: Willson One-Piece Welding Helmet *plus* green Willson-Weld glass equals dependable protection—from heat, glare, metal spatter, ultra-violet and infra-red rays.



Clear cover glass fits over Willson-Weld lens to protect it from pitting. Both lens and cover glass are easy, economical to replace. Helmet covers both front and sides of face and neck.



Look for the WW trademark on each Willson lens. Your assurance that it meets highest Federal specifications. Shade number indicates thickness and density of lens. Simplifies selection.



For help with your welding eye protection problems, consult your Willson distributor or write for further information.

GOGGLES • RESPIRATORS • GAS MASKS • HELMETS

WILLSON
DOUBLE
PRODUCTS INCORPORATED
Established 1870

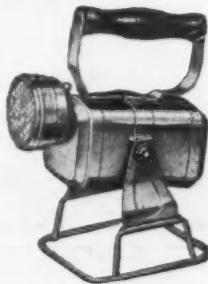
241 WASHINGTON STREET • READING, PA., U.S.A.

NO SPOTS

**NO
DARK RINGS**

...AND A CIRCLE OF LIGHT
3 TIMES AS LARGE!

That's what you get in the new Justrite Car Inspector's Lantern No. 2111. It's due to the revolutionary new Justrite Honeycomb Lens. With the standard lens, at an 8-foot distance, all the light is concentrated within a circle *only one foot in diameter*. But the Justrite Honeycomb Lens in this lantern, at that same distance of 8 feet, spreads a clear brilliant beam of light over a circle three feet in diameter. An area *three times as large!* And there are no dark rings. No distortions. You get light "what is light." This new Justrite Car Inspector's Lantern has $2\frac{1}{2}$ inch head and uses standard 6-volt dry battery. A finely constructed lantern with many uses.



Model No. 2111

**Oiler's and Packer's
Head-Lantern**

Powerful beam that can be focused exactly where desired because of specially designed bulb housing that fastens on head, wrist, knee or shoulder. Battery case fastens with shoulder and belt straps, leaving hands free. Uses standard 6-volt railroad battery and bulb. Strong durable construction.



Model No. 1955

Ask your Supplier or Write for Details

JUSTRITE MANUFACTURING COMPANY
2063 N. Southport Ave., Dept. D-1, Chicago 14, Ill.

JUSTRITE *Safety Products*

SAFETY CANS • FILLING CANS • OILY WASTE CANS
APPROVED SAFETY ELECTRIC LANTERNS

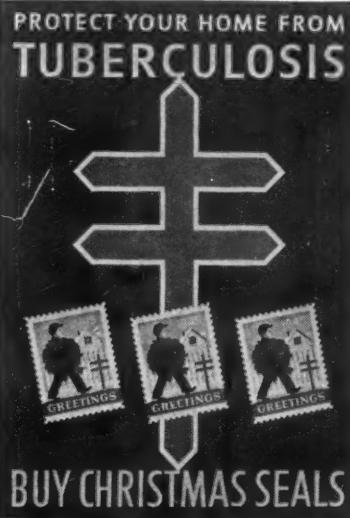
GET TOGETHER DEPARTMENT

Educational Services for RAILROAD MEN

Our New Service
on
Diesel Locomotive
Operation
is highly recommended
for
Engineers and Firemen

*The Railway
Educational Bureau
Omaha 2, Nebraska*

KEEP BUYING BONDS



GOLD

CAR HEATING SPECIALTIES
OF QUALITY

STEAM — VAPOR — ELECTRIC

GOLD CAR HEATING & LIGHTING CO.
33-35TH STREET, BROOKLYN, N. Y.

LOCOMOTIVES

1—Westinghouse, 2-Unit, 87-Ton
600 H.P. Diesel Electric.
Built 1928. Tractive effort
52,200 lbs.
2—44-Ton Westinghouse, Electric
600 V. D.C. Excellent
Condition, Just Overhauled.
Other Diesel & Steam Locomo-
tives too!

Send us your Inquiry

IRON & STEEL PRODUCTS, Inc.
40 years' experience
13486 S. Brainard Ave.
Chicago 33, Ill.
"ANYTHING containing IRON
or STEEL"

How could YOUR OWN tank cars?

Reduce your Costs?
Save you Labor?
Save you Money?
Improve your Operations?
Increase your Profits?

?

We have just purchased several
hundred good used cars right out
of service.

These Are Available to
You at Close to Pre-
War Prices!
Request our prices—"If just out
of curiosity"—because there is no
obligation.

Tank Car Tanks Also for
Sale and Priced Right too!

IRON & STEEL PRODUCTS, Inc.
40 years' experience
13486 S. Brainard Ave.,
Chicago 33, Illinois
"ANYTHING containing IRON
or STEEL"

RAILROAD EQUIPMENT

78 ton Baldwin Type 0-6-0 Switcher — Side Tank
80 ton Baldwin Type 0-6-0 Switcher — Separate Tender
110 ton American Type 0-8-0 Switchers — Separate Tenders
181 ton American Type 2-8-2 Mikados with Boosters

25—50 ton all steel box cars. Capacity 3548 cu. ft.

Model 250 Brill Gas Electric all steel combination passenger, baggage
and mail car new in 1928. Now being completely rebuilt.

Full detailed particulars with quotation on any of the above items
will be gladly furnished.

THOMAS F. CAREY CO., Inc.
120 LIBERTY STREET
New York 6, New York

FREIGHT CARS QUICK DELIVERY

50—Dump, Western, 20 cu. yd.,
40-Ton, Lift doors
50—Gondola, 50-Ton, All Steel,
Solid Bottom
15—Hopper, Twin, 50-Ton
77—Hopper, Side Discharge, 50-
Ton
25—Box, 40 Ft., 50-Ton
12—Dump, Easton-Duplex, 40-
Ton

IRON & STEEL PRODUCTS, INC.
40 years' experience
13486 S. BRAINARD AVE.,
CHICAGO 33, ILLINOIS
"ANYTHING containing IRON
or STEEL"

Wanted—A Junior Editor

A man with technical training
and some practical experience in
the mechanical department of a
steam railway, preferably both
mechanical and electrical. Must
demonstrate his ability to write
English clearly and concisely.
Editorial experience unnecessary.
This job has a future for the
right man. Address Box 664,
Railway Age, 30 Church Street,
New York 7, N. Y.

FOR SALE
One (1) Scale Car, Practically
New, Weight — 67,300 pounds.
Address Box 780, Railway Age,
30 Church St., New York 7,
N. Y.

SAVE

on Railway Equipment

—New Spikes and Bolts—
Relaying Rails and
Angle Bars

Good used tie plates, anti rail
creepers and other railway sup-
plies and equipment.

SONKEN-GALAMBA
Corporation
KANSAS CITY 18, KANS.

USE
SPACE
IN
THE
GET-
TOGETHER
DEPARTMENT

USE
SPACE
HERE

BUY
VICTORY
BONDS
TO FINISH
THE JOB

CAR HEATING SPECIALTIES
OF QUALITY

STEAM — VAPOR — ELECTRIC

GOLD CAR HEATING & LIGHTING CO.
33-35TH STREET, BROOKLYN, N. Y.



The Viking Pump Company is represented by a nation-wide sales and service organization in key cities from coast to coast - from Canada to the Gulf. Is your pumping installation operating at high efficiency? Do you have a pump maintenance problem? Write or call the Viking representative nearest your plant for service.

CHICAGO 6
Viking Pumps
349 West Washington Blvd
Phone: State 5819

CLEVELAND 13

Viking Pump Company
310 Marshall Building
Phone: Cherry 6887

INDIANAPOLIS 4

Viking Pump Company
297 Peacock Building
Phone: Lincoln 4785

KANSAS CITY 6

Viking Pump Company
681 Pickwick Building
Phone: Harrison 8833

LOS ANGELES 21

Viking Pump Company
3840 South Santa Fe Ave.
Phone: Kimball 4476

MILWAUKEE 3

Viking Pump Company
418 West Michigan Street
Phone: Daly 6887

NEW YORK 23

Viking Pump Company
1841 Broadway at 68th St.
Phone: Circle 7-3234

BALTIMORE 1

Wallace Stebbins Co.

Charles and Lombard Sts.

VIKING PUMPS
AMERICA
INC.

BOISE
The Olson Manufacturing Co.
P. O. Box 1487

BOSTON 10

Hayes Pump and Machinery
Company
123 Purchase Street

BUFFALO 19

Boat, Heil & Company
P. O. Box 17
Station D

CHARLOTTE

Southern Pump & Tank Co.
1730 No. Tryon St.

CINCINNATI 16

East Machinery Co.
Kear Building

DENVER

Hendrie's Railroad Co.
1825 17th St.

DENVER

Exxon Metal Products Co.
600 York Street
also

Albuquerque Pueblo
Billings and Omaha

EVANSTON

Shaw Machinery Co.
222 Court Street

HOUSTON 1

Southern Engine & Pump Co.
881 St. Charles Street
also

St. Louis, San Antonio and
El Paso

LOUISVILLE 2
Neill, LaVilla Supply Co.
305 West Main Street

MEMPHIS 2

J. E. Dimarco Co.
347 South Front St.

MINNEAPOLIS 14

Leon C. Godwin
121 35th Avenue S.E.

NASHVILLE

General Equipment Co.
Fred T. Wilson
1804 25th Avenue S.

NEW ORLEANS 13

Moore Pump & Mach. Co.
623 Howard Ave.

PHILADELPHIA 26

Walter L. Egan Co.
2238-38 Farmer Street

PITTSBURGH 22

Power Equipment Co.
Olive Building

RICHMOND 5

Birchwood Engineering Co.
7th and Hinckley Sts.

SAN FRANCISCO 19

Dekalb Pacific Co.
81 State St.
also

Seattle and Portland

ST. LOUIS 1

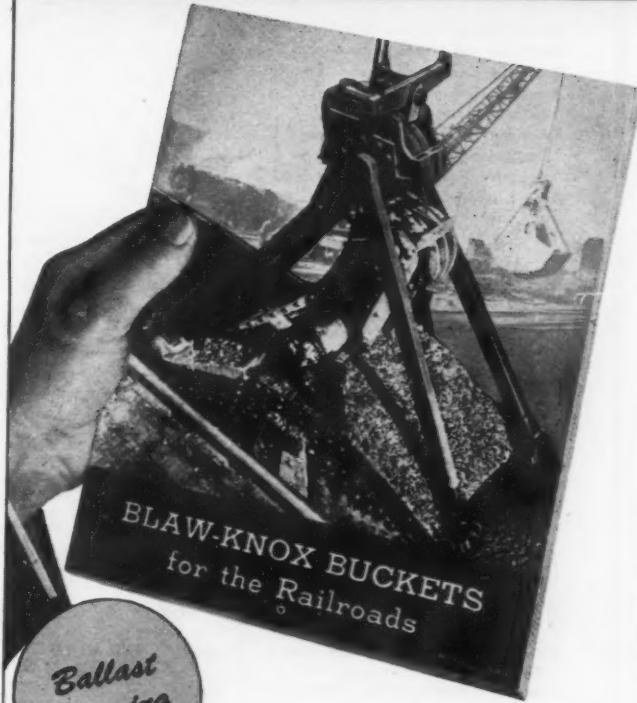
Lane Machinery Co.
7th & Market Streets

TULSA 2

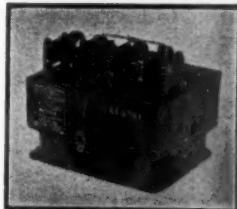
Walter Lewis Company
200 E. Archer St.

VIKING Pump COMPANY
CEDAR FALLS IOWA

Here's the LATEST INFORMATION on BUCKETS for Railroad Requirements



"MOONEY" QUAD-VALVE CYLINDER HEADS



FOR RAIL CAR ENGINES

Designed to fit—

Models 120, 146 and 148
Winton Engines

Models 660 and 860 Brill
Engines

"MOONEY" QUAD-VALVE CYLINDER HEADS —

complete with Valve-Motion — insure

- Increased Power
- Better Fuel Economy
- More Mileage per Overhaul
- Decreased Maintenance Cost
- Better Thermal Efficiency
- Forced Water Circulation directly against and around valve seats

Manufactured by

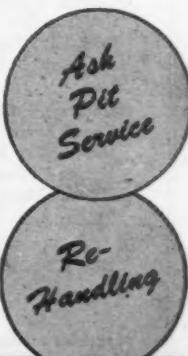
AUTO ENGINE WORKS (INC.)

249 North Hamline Ave. Saint Paul, Minnesota

Blaw-Knox makes it easy for the railroad man to pick the right bucket for the right job.

Blaw-Knox Buckets are doing a first-class job for the nation's railroads—and Blaw-Knox Bulletin No. 1989 is the railroader's "bible" for bucket selection.

Get a copy today for your files. It's a valuable guide, this Blaw-Knox Bulletin No. 1989. Write, wire or phone for your copy.



BLAW-KNOX DIVISION

of Blaw-Knox Company
2061 FARMERS BANK BUILDING, PITTSBURGH, PA.
NEW YORK • CHICAGO • PHILADELPHIA • BIRMINGHAM • WASHINGTON
Representatives in Principal Cities

Index to Advertisers

December 15, 1945

A		M	
Aireon Manufacturing Corporation	32	M & J Diesel Locomotive Filter Co.	70
American Arch Company, Inc.	58	Magor Car Corporation	31
American Car and Foundry Company	19 to 22 incl.	Miner, Inc., W. H.	3
American Locomotive Company	60a, 60b	Missouri-Kansas-Texas Railroad System	63
American Optical Company	12		
American Steel & Wire Company	4, 5	N	
American Steel Foundries	13	Nathan Manufacturing Co.	77
Anemostat Corporation of America	11	National Lead Company	26
Auto Engine Works (Inc.)	73	National Malleable and Steel Castings Co.	44
Automatic Transportation Company	52	National Pneumatic Company	33
B		National Supply Company	30
Baldwin Locomotive Works, The	Front Cover, 65	National Tube Company	4, 5
Bethlehem Steel	10	New York Air Brake Company, The	66
Blaw-Knox Division of Blaw-Knox Company	73		
C		O	
Carey Co., Inc., Thomas F.	72	Ohio Locomotive Crane Company	39
Carnegie-Illinois Steel Corporation	4, 5	Okonite Company, The	56
Classified Advertisements	72	Oliver Iron and Steel Corporation	38
Columbia Steel Company	4, 5	Oxweld Railroad Service Company, The	41
Cummins Engine Company, Inc.	36		
D		P	
Differential Steel Car Co.	70	Parker Appliance Co., The	14
Duryea Corporation, O. C.	15	Peerless Equipment Company	46
		Pittsburgh Steel Foundry Corporation	45
E			
Edison Storage Battery Division of Thomas A. Edison, Inc., incorporated	24	R	
Edwards Company, Inc., The O. M.	27	Railway Educational Bureau, The	72
Electric Storage Battery Company, The	16	Republic Steel Corporation	47
Electric Tamper & Equipment Co.	28	Ryerson & Son, Inc., Joseph T.	64
F			
Fairbanks, Morse & Co.	25	S	
Flintkote Company, The	18	Schaefer Equipment Company	34
Franklin Railway Supply Company, Inc.	59	Sellers & Company, Wm.	67
		Sinclair Refining Company	8, 9
G		Sonken-Galama Corp.	72
General American Transportation Corporation	48	Standard Car Truck Company	37
General Electric Company	23	Standard Register Company, The	49
General Fireproofing Co., The	43	Standard Steel Works Div. of The Baldwin Locomotive Works	65
Get Together Department	72	Streeter-Amet Company	70
Gold Car Heating & Lighting Co.	72	Superheater Company, The	60
H		Superior Engines Division of The National Supply Co.	30
Harbison-Walker Refractories Co.	58	Sylvania Electric Products, Inc.	48
Houde Engineering Division of Houdaille-Hershey Corporation	42		
Hunt-Spiller Mfg. Corporation	62	T	
Hyman-Michaels Company	70	Teletype Corporation	50
Hyster Company	17	Tennessee Coal, Iron & Railroad Company	4, 5
		Timken Roller Bearing Company, The	Back Cover
I			
Iron & Steel Products, Inc.	72	U	
		Union Carbide and Carbon Corporation	41
J		Union Switch & Signal Co.	54
Justrite Manufacturing Company	71	Unit Truck Corporation	2
		United States Steel Export Company	4, 5
L		United States Steel Supply Company	4, 5
Lima Locomotive Works, Incorporated	57		
Lincoln Electric Company, The	6, 7	V	
Locomotive Finished Material Co., The	29	Viking Pump Company	73
W		W	
Wall Street Journal, The	69	Western Electric Company, Inc.	50
Western Railroad Supply Company	35	Westinghouse Air Brake Co.	61
Westinghouse Electric Corporation	51	Westinghouse Electric Corporation	51
Whitcomb Locomotive Co., The, Subsidiary of The Baldwin Locomotive Works	68	Willson Products, Incorporated	71



YOU'RE
LUCKY

You Don't Have to "Dunk" Locomotives

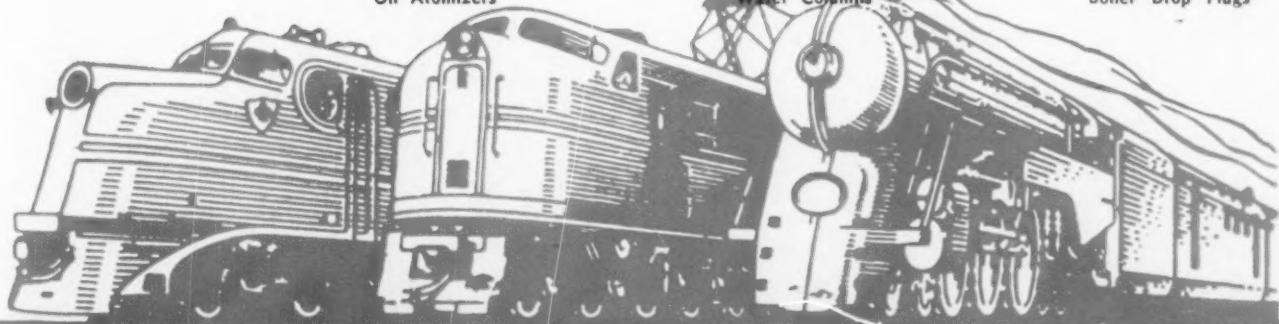
WATER buffalos wallow in water a few hours a day "to oil" their skin before they are ready for their job of transportation. Locomotives, however, no matter how big or complicated are so easily lubricated in the NATHAN way. For example on many modern locomotives, Nathan Mechanical Lubricators and Nathan Distributors deliver oil to and prevent frictional wear at more than 200 vital points on the locomotives. Such complete, thorough and dependable NATHAN lubrication not only improves locomotive performance and reduces maintenance—but speeds up the turning of locomotives at terminals.

NATHAN Products which are improving the performance of Steam, Diesel and Electric locomotives include:

Mechanical Lubricators
Oil Distributors
Oil Atomizers

Air Pump Lubricators
Heavy Duty Injectors
Water Columns

Reflex Water Gauges
Low Water Alarms
Boiler Drop Plugs

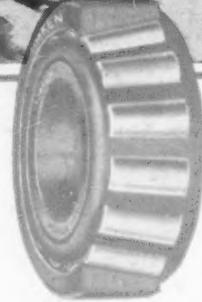


NATHAN MANUFACTURING CO., 250 PARK AVE.
Established 1864 NEW YORK 17, N.Y.

COLD CAN'T STOP TIMKEN BEARINGS



(PHOTOGRAPH COURTESY OF NEW YORK CENTRAL SYSTEM)



Let it snow—let it blow
— let the temperature
drop to zero, or below!
Timken Railroad Bearings
continue to roll
as smoothly, freely and
dependably as in the warmth of summer.

Furthermore, because the efficiency of Timken Railroad Bearings is as high in winter as in summer, **NO REDUCTION IN TRAIN TONNAGE IS NECESSARY.**

This was proved in a test made by a large railroad with 70 ton capacity Timken Bearing Equipped freight cars against similar cars equipped with friction bearings. We quote from the official report of the test: "With the winter temperatures at which these tests

were run 32 to 18 degrees Fahrenheit, the maximum resistance of the Timken cars was from 35 to 23 per cent less than that of the standard cars, and the constant speed resistance was from 18 to 4 per cent less. The implications are that no matter how low the temperatures the resistance of the Timken Roller Bearing cars will be no higher in winter than in summer and therefore, with such cars there should be no reason for winter reduction in tonnage rating."

THE TIMKEN ROLLER BEARING COMPANY, CANTON 6, OHIO

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
RAILWAY ROLLER BEARINGS

30

Most
built
recently

In
vege-
on the
the Sea

The
addition
electric
Baldw